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U. S. DEPARTMENT OF AGRICULTURE

PEACE • ON EARTH •
GOOD • WILL • TOWARD MEN



THE GLEANINGS IN BEE CULTURE

DEVOTED
TO
BEE KEEPING

& HOME INTERESTS.

MEDINA • OHIO •

BY

ALBION

TERMS, ONE DOLLAR PER YEAR.

ENTERED AT THE POSTOFFICE MEDINA, OHIO, AS SECOND-CLASS MATTER.

GLEANINGS IN BEE CULTURE.

ADVERTISEMENTS.

We require that every advertiser satisfy us of responsibility and intention to do all that he agrees, and that his goods are really worth the price asked for them. Patent-medicine advertisements, and others of a like nature, can not be inserted at any price.

Rates for Advertisements.

All advertisements will be inserted at the rate of 20 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

On 10 lines and upward, 3 insertions, 5 per cent; 6 insertions, 10 per cent; 9 insertions, 15 per cent; 12 insertions, 20 per cent; 24 insertions, 25 per cent.

On 48 lines (½ column) and upward, 1 insertion, 5 per cent; 3 insertions, 10 per cent; 6 insertions, 15 per cent; 9 insertions, 20 per cent; 12 insertions, 25 per cent; 24 insertions, 33½ per cent.

On 96 lines (whole column) and upward, 1 insertion, 10 per cent; 3 insertions, 15 per cent; 6 insertions, 20 per cent; 9 insertions, 25 per cent; 12 insertions, 33½ per cent; 24 insertions, 40 per cent.

On 192 lines (whole page), 1 insertion, 15 per cent; 3 insertions, 20 per cent; 6 insertions, 25 per cent; 9 insertions, 30 per cent; 12 insertions, 40 per cent; 24 insertions, 50 per cent.

No additional discount for electrotype advertisements. A. I. Root.

CLUBBING LIST.

We will send GLEANINGS—
 With the American Bee-Journal, W'y (\$1.00) \$1.75
 With the Bee-keepers' Magazine, (50) 1.45
 With the Canadian Bee Journal, W'y (1.00) 1.75
 With the Bee Hive, (30) 1.20
 With the Bee-keepers' Review, (50) 1.40
 With the British Bee-Journal, (2.62) 2.90
 With American Apiculturist, (\$1.00) 1.75
 With all of the above journals, 6.40

With American Agriculturist, (\$1.50) 2.25
 With American Garden, (1.00) 1.75
 With Prairie Farmer, (1.50) 2.35
 With Rural New-Yorker, (2.00) 2.90
 With Farm Journal, (50) 1.25
 With Scientific American, (3.20) 3.50
 With Ohio Farmer, (1.00) 1.90
 With Popular Gardening, (1.00) 1.75
 With U. S. Official Postal Guide, (1.50) 2.25
 With Sunday-School Times, weekly, (2.00) 2.25
 With Drainage and Farm Journal, (1.00) 1.75
 [Above Rates include all Postage in U. S. and Canada.]

FLAT - BOTTOM COMB FOUNDATION.



High side-walls, 4 to 14 square feet to the pound. Circular and samples free.

J. VAN DEUSEN & SONS,

5thd Sole Manufacturers,
 SPROUT BROOK, MONT. CO., N. Y.

☞ In responding to this advertisement mention GLEANINGS.

VANDERVORT COMB FOUNDATION MILLS.

Send for samples and reduced price list.

1thd JNO. VANDERVORT, Laceyville, Pa.

☞ In responding to this advertisement mention GLEANINGS.

SOUTHERN HEADQUARTERS FOR EARLY QUEENS,

Nuclei, and full colonies. The manufacture of hives, sections, frames, feeders, foundation, etc., a specialty. Superior work and best material at "let-live" prices. Steam factory, fully equipped, with the latest and most approved machinery. Send for my illustrated catalogue. Address

5thd J. P. H. BROWN, Augusta, Ga.

☞ In responding to this advertisement mention GLEANINGS.

Names of responsible parties will be inserted in any of the following departments, at a uniform price of 20 cents each insertion, or \$2.00 per annum, when given once a month, or \$4.00 per year if given in every issue.

Untested Queens

FOR \$1.00 FROM JULY 1ST TILL NOV. 1ST.

Names inserted in this department the first time without charge. After, 20c each insertion, or \$2.00 per year.

Those whose names appear below agree to furnish Italian queens for \$1.00 each, under the following conditions: No guarantee is to be assumed of purity, or anything of the kind, only that the queen be reared from a choice, pure mother, and had commenced to lay when they were shipped. They also agree to return the money at any time when customers become impatient of such delay as may be unavoidable.

Bear in mind, that he who sends the best queens, put up most neatly and most securely, will probably receive the most orders. Special rates for warranted and tested queens, furnished on application to any of the parties. Names with *, use an imported queen-mother. If the queen arrives dead, notify us and we will send you another. Probably none will be sent for \$1.00 before July 1st, or after Nov. If wanted sooner, or later, see rates in price list.

*A. I. Root, Medina, Ohio.
 *H. H. Brown, Light Street, Columbia Co., Pa. 1thd
 *Paul L. Viallon, Bayou Goula, La. 19thd
 *S. F. Newman, Norwalk, Huron Co., O. 19thd
 *D. G. Edmiston, Adrian, Len. Co., Mich. 19thd
 *Jos. Byrne, Ward's Creek, East Baton Rouge 19thd Par., La. 5-3
 *E. Burke, Vincennes, Knox Co., Ind. 21thd
 C. C. Vaughn, Columbia, Tenn. 3thd
 J. M. Jenkins, Wetumpka, Ala. 1-24
 H. G. Frame, N. Manchester, Wab. Co., Ind. 9thd
 J. W. Winder, New Orleans, La. 9-21d
 Miller Bros., Bluffton, Mont. Co., Mo. 11thd
 D. A. McCord, Oxford, Butler Co., O. 13-17d
 Wm. L. Ashe, Edwardsville, Mad. Co., Ill. 4-5
 *J. N. Colwick, Norse, Bosque Co., Texas 21thd
 W. A. Peck, Hartwell, Hart Co., Ga. 3thd

Hive Manufacturers.

Who agree to make such hives, and at the prices named, as those described on our circular.

A. I. Root, Medina, Ohio.
 P. L. Viallon, Bayou Goula, Iberville Par., La. 21thd
 C. W. Costellow, Waterboro, York Co., Me. 1-23
 R. B. Leahy, Higginsville, Laf. Co., Mo. 21thd
 J. M. Jenkins, Wetumpka, Ala. 3thd
 F. A. Snell, Milledgeville, Carroll Co., Ill. 4-5

ITALIAN 5 FOR \$3.00. ITALIAN QUEENS 4-BANDED, QUEENS \$1.50 EACH.

20-PAGE CATALOGUE FREE.

SAMPLE OF 4-BANDED WORKERS, 2 Cts.

C. M. GOODSPEED, BOX 31, THORN HILL, CONN. CO., N. Y.
 Mention Gleanings. 2-48d

Cash for Beeswax!

Will pay 20c per lb. cash, or 23c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 25c per lb., or 28c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

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CONVENTION NOTICES.

The Pan-Handle Bee-Keepers' Association will hold its next meeting in the K. of P. Hall, on Main St. between 11th and 12th sts., Wheeling, W. Va., Nov. 21 and 22, 1888. All bee-keepers are cordially invited. W. L. KINSEY.
Blaine, O.

PASTEBOARD BOXES

FOR ONE-POUND SECTIONS OF

COMB HONEY.



THIS box has a bit of "red tape" attached to it to carry it by. It makes a safe package for a single section of honey for the consumer to carry, or it can be packed in a trunk, if he wants. It can be opened in an instant. The price of the box is 2 cts. each, set up; in the flat, 15 cts. for

10; package of 25, 25 cts.; 75 cts. per 100; or \$6.00 per 1000; 10,000, \$55 00; without the tape handle, deduct 10 cts. per 100. If wanted by mail, add \$1.00 per hundred for postage. Colored lithograph labels for putting on the sides, two kinds, one for each side, \$3.00 per 1000. A package of 25, labeled on both sides, as above, 45 cts. By mail, 30 cts. more. They can be sold, labeled on one side or both sides, of course. We have only one size in stock, for Simplicity sections. Sample by mail, with a label on each side, 5 cts. If you want them shipped in the flat, labels already pasted on, the price will be ten cents per hundred for putting them on. We can print your name and address in a nice design right on one side of the box for 50 cts. per 100; \$1.00 for 500, or \$1.75 per 1000.

Your name and address, and the kind of honey, may be printed on these labels, the same as other labels. The charge for so doing will be 30 cts. per 100; 250, 50 cts.; 500, 75 cts.; 1000, \$1.00.

A. I. ROOT, Medina, Ohio.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column. 3htfd

BEEs, Queens, Hives, Given Comb Foundation, Apiarian Supplies, German Carp, Small-fruit Plants. Send for catalogue free. E. T. FLANAGAN, Belleville, Ills. 1-24db.

BEEs FOR SALE.

I have 80 fine swarms of bees in Simp. and Langstroth hives, which I want to sell. Price \$200. Twenty swarms are Italians; honey enough in hives to pay for the whole. F. TOMPKINS,
Lawsville Center, Susq. Co., Pa.

Wants or Exchange Department.

Notices will be inserted under this head at one-half our usual rates. All ad's intended for this department must not exceed 6 lines, and you must say you want your ad. in this department, or we will not be responsible for any error. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale can not be inserted under this head. For such our regular rates of 20 cts. a line will be charged, and they will be put with the regular advertisements.

WANTED.—To exchange full colonies of bees, \$5.00, for poultry, seeds, tools, honey-boards, fdn., sections, F. P. saw, or any thing I can use on farm or apiary. W. H. LAWS, Lavaca, Ark. 15tdfb Ex. Office, Ft. Smith.

WANTED.—To exchange for extracted honey, a 10 h. p. horizontal engine, worth \$200. I will give somebody a rare bargain. Speak quick. 15tdfb C. H. SMITH, Pittsfield, Mass.

WANTED.—To exchange dried fruit, peaches and apples, for good clover and basswood honey. Will give 1 lb. of peaches for 1 lb. of honey. 15tdfb T. A. GUNN, Tullahoma, Tenn.

Do you wish to exchange extracted honey for supplies? If so, write at once to CHAS. H. SMITH, Pittsfield, Mass. 15tdfb

WANTED.—To exchange choice Italian queens for comb or extracted honey. Correspondence solicited. JAMES F. WOOD, 13tdfb North Prescott, Mass.

WANTED.—To exchange portable baker's oven (could be used for drying fruit) for bees or offers. B. M. YORK, Grove City, Florida. 19d

WANTED.—To know how many bees you want for your Springfield Roadster. L. HEINE, 19d Bellmore, Queens Co., N. Y.

WANTED.—Good gold or silver watch, or supplies, for bees. F. ERKEL, LeSueur, Minn. 19d

Black and Hybrid Queens For Sale.

For the benefit of friends who have black or hybrid queens which they want to dispose of, we will insert notices free of charge, as below. We do this because there is hardly value enough to these queens to pay for buying them up and keeping them in stock; and yet it is oftentimes quite an accommodation to those who can not afford higher-priced ones.

Carniolan and Italian hybrids, 40 cents. Other hybrids and brown queens, 20 cts. each; guaranteed young, prolific, and industrious, from natural swarms. F. C. MORROW,

Wallaceburg, Hempstead Co., Ark.

FOR SALE.—8 or 10 black and hybrid queens in October, at 30 cts. each. Address

WM. H. COMBS, Marceline, Linn Co., Mo.

About 30 surplus tested Italian queens, at 50 cts. C. WEEKS, Clifton, Tenn.

I have some black queens, which I will sell at 25 cts. each, or 5 for \$1.00, as long as they last. First come first served, and served well too. C. H. EHLERS, Pleasant Valley, Scott County, Iowa.

Italian Queens! Tested, \$1.25; Untested, 50c. MISS A. M. TAYLOR, 19d Mulberry Grove, Bond Co., Ill. Box 77.

MELISSA, OR BEE-BALM.

Can furnish strictly pure clean seed at 50 cts. per ounce. Send for 10 cts. worth and try it. Now is the time to plant. Address 18-19d G. W. BALDWIN, Forest City, Holt Co., Mo.

DADANT'S FOUNDATION FACTORY, Wholesale and retail. See advertisement in another column. 3htfd

HONEY COLUMN.

CITY MARKETS.

NEW YORK.—*Honey*.—New comb honey is arriving quite freely, and we quote as follows:

Fancy white, 1-lbs., 17@18; off grades, 15@16.
2 lbs., 13@14; 12.

Buckwheat, 1-lbs., 11@12; 2-lbs., 10@11.
Extracted white, 7½@8½. Buckwheat, 5½@6½.

" California, white sage, 7¼@7½. Amber, 7¼@7½. *Beeswax*, 23@23½. The demand is very good, and we would advise bee-keepers to ship as early as possible and obtain prompt returns.

Sept. 25. HILDRETH BROS. & SEGELKEN,
25 & 30 West Broadway, New York.

KANSAS CITY.—*Honey*.—We quote white 1-lb. comb at 17@18; 2-lb. comb, 14@16; 1-lb. California, 16@17; 2-lb., 14@16. Extracted, 7@7½; amber, 6½@7. Amber and dark, in bbls., 3@5. *Beeswax* per lb., 18@20.

Sept. 22. CLEMONS, CLOON & Co.,
Kansas City, Mo.

COLUMBUS.—*Honey*.—Demand for honey is good. Fancy white, 1-lb., 16@18; same, 2-lbs., 15@18. Medium white, 1-lb., 12½@14; same, 2-lbs., 10@14. Extracted, No. 1, 10; No. 2, 8. We are receiving large consignments of fine stock, and selling on arrival at above prices. *Beeswax*.—We have no market at present.

Sept. 22. EARLE CLICKENGER,
Columbus, Ohio.

ST. LOUIS.—*Honey*.—The demand for honey is still light with us. White clover, comb, 13@14; extracted, can, 7@8. Barrels, 5½@6½. Dark comb, 11@12. Extracted, manufactured stock, 4@5. Some sections adjacent to us have good fair crops of honey; but the general report will not make over ½ crop in this section. *Beeswax*, 21 for prime; select yellow, 22½@23.

Sept. 22. W. B. WESTCOTT & Co.,
St. Louis, Mo.

BOSTON.—*Honey*.—1-lb. white, 18; 2-lb. white, 14@16. Extracted, 8@20. *Beeswax*, 25. Trade is quiet and supply is fair.

Sept. 22. BLAKE & RIPLEY,
57 Chatham St., Boston, Mass.

CHICAGO.—*Honey*.—Sales are being made in a small way at 18c for the best white comb in pound sections. Receipts are light, but there is sufficient to meet the requirements of the trade. Extracted, about 8 cents for best white. *Beeswax*, 22 for yellow.

Sept. 21. R. A. BURNETT,
Chicago, Ill.

ALBANY.—*Honey*.—Market is slow, as not enough is coming to make a market yet. I don't see why bee-keepers persist in keeping honey back in the beginning of the season, the best time to sell, always. We are selling white-clover, comb, 15@20, according to style and size of comb. Mixed-clover, comb, 13@15. Buckwheat, comb, 12@14. White extracted, 8@9; buckwheat extracted, 6@7. Consignments solicited.

Sept. 22. H. R. WRIGHT,
Albany, N. Y.

DETROIT.—*Honey*.—The market is about bare of all kinds. Best white comb, 17@18; dark, 16. Extracted, 8@10. *Beeswax*, 21@22.

Sept. 22. M. H. HUNT,
Bell Branch, Mich., Sept. 24, 1888.

CINCINNATI.—*Honey*.—No change from our last quotations. Demand is slow for all kinds of honey. Extracted honey brings 5@8c on arrival. Best comb honey, 12@16c, in the jobbing way. *Beeswax*.—There is a good demand, which brings 20@22c on arrival for good to choice yellow.

Sept. 27. CHAS. F. MUTH & SON,
Cincinnati, Ohio.

ST. LOUIS.—*Honey*.—We have to report a quiet market. We quote strained and extracted, in barrels, 4½@5½, in cans, 7¼@9. Comb, 13@15.

Sept. 24. *Beeswax*, prime, 21.
D. G. TUTT GROCER CO.,
St. Louis, Mo.

FOR SALE.—About four tons of honey in first-class shape, in 1 and 1½ lb. sections.

JAS. HALLENBECK, Altamont, Albany Co., N. Y.

HONEY.

We advise bee-keepers not to sell before getting our high prices. State quality, quantity, and style of packages; send samples of extracted, with sender's name marked on same.

F. G. STROHMMEYER & CO.,

18-21db 122 Water St., New York.

In responding to this advertisement mention GLEANINGS.

WANTED.—To purchase one to three thousand pounds choice white clover honey in one-pound sections. Crates to average about 20 pounds each.

J. T. CARSON, 18 21db
325 W. Main St., Louisville, Ky.

DADANT'S FOUNDATION FACTORY, WHOLESALE AND RETAIL. See advertisement in another column

NON-SWARMING QUEENS.

I now have 25 non-swarming queens, bred from the queen spoken of in August 15th GLEANINGS, page 649. I will take \$4.00 each for them. They were raised in full colonies, and are laying. I will guarantee safe arrival by mail, or I will send a two-frame nucleus, including a non-swarming queen, for even \$5.00. I shall keep a careful record of every queen sold, and will ask the purchasers to report to me next spring.

R. B. WILLIAMS,
Winchester, Tenn.

In responding to this advertisement mention GLEANINGS.

RUBBER STAMPS. Send for Bee-Keepers' catalogue.

G. W. BERCAW, Fostoria, Ohio.

NATURAL STORES

FOR FALL FEEDING AND WINTERING.

We offer for sale 300 Langstroth and Root's Simplicity metal-cornered wired frames, with from five to ten pounds of mostly sealed (some wholly) new honey in each. Wired frames, 7½c per lb. Langstroth frames, 7c per lb. Delivered at depot. No foul brood ever within 100 miles.

19tfdb HALLETT & SON, Galena, Illinois.
In responding to this advertisement mention GLEANINGS.

FOR SALE.

FULL COLONIES OF PURE ITALIAN BEES,

In A. I. Root's Simplicity hive, only \$4.00. Pedigreed Poland-China swine at reasonable prices. White and black ferrets; single ferret, either sex, \$2.00; per pair, \$3.50; per trio, \$5.00. Pure White Leghorn fowls, single bird, \$2.00; per pair, \$3.50; per trio, \$5.00. Safe arrival always guaranteed.

Address N. A. KNAPP,
19-20d Rochester, Lorain Co., Ohio.

THE BEE - KEEPERS' REVIEW

For September is specially devoted to "Food, and its Relation to the Wintering of Bees." If you wish to know the view of such men as Mr. Heddon, J. H. Martin, L. Stachelhausen, Dr. L. C. Whiting, Dr. Miller, R. L. Taylor, and O. O. Poppleton, read this number. Price of the REVIEW, 50 cts. a year. Samples free. Back numbers can be furnished.

THE PRODUCTION OF COMB HONEY.

A neat little book of 45 pages; price 25 cts. The REVIEW and this book for 65 cts. Stamps taken, either U. S. or Canadian. Address

W. Z. HUTCHINSON,
613 Wood St. Flint, Mich.
In responding to this advertisement mention GLEANINGS.

BEE - KEEPERS, TAKE NOTICE.

To introduce our sections we will from now until Jan. 1, 1889, sell A No. 1, all white, at \$2.75 per 1000; second class, \$2.25 per 1000. All other supplies at a correspondingly low figure. Sample sections and price list free. Address R. H. SCHMIDT & CO.,
19d New London, Waupaca Co., Wis.



Vol. XVI.

OCT. 1, 1888.

No. 19.

TERMS: \$1.00 PER ANNUM, IN ADVANCE; 2 Copies for \$1.90; 3 for \$2.75; 5 for \$4.00; 10 or more, 75 cts. each. Single number, 5 cts. Additions to clubs may be made at club rates. Above are all to be sent to ONE POSTOFFICE.

Established in 1873.

PUBLISHED SEMI-MONTHLY BY

A. I. ROOT, MEDINA, OHIO.

Clubs to different postoffices, NOT LESS than 30 cts. each. Sent postpaid, in the U. S. and Canada. To all other countries of the Universal Postal Union, 18 cts. per year extra. To all countries NOT of the U. P. U., 42 cts. per year extra.

QUEENS INJURED IN SHIPPING.

IS HER FERTILITY PERMANENTLY OR TEMPORARILY IMPAIRED BY SHIPPING?

ON page 685 of GLEANINGS I find these words: "No, the confinement of a queen during a shipment of six or eight days rarely if ever affects her fertility. * * * We can speak positively when we say that shipment either by mail or express does not deteriorate the laying qualities of a queen." Now, I suppose, as a breeder of queens, if I would consult my own interests I should let this pass unchallenged; but I feel that duty and truth require me to protest a little from such a decision, when the facts along the line of injury to queens in shipment are so plainly to be seen, as I and others have often seen them. Probably no man in the U. S. has any more flattering testimonials according to the number of queens shipped than I have; yet this does not prove that none of the queens I have sent out have never been injured by shipment. By shipment I include all of the necessary evils attending the removal of a queen from her hive and home, and sending her to another hive and home where she is obliged to suddenly stop a profuse egg-laying, and continue in this condition for from three days to three weeks. If I am not mistaken, it was Mr. James Heddon who first called attention to this injury, attributing it at that time to the rough usage the queens received in the mails, saying that under no consideration would he have a valuable queen sent in any way but by express. When I read this, which was several years ago, I said this accounts for the unsatisfactory results I have obtained from queens which

I have purchased that were sent me by mail, so for some time after that I ordered all of the choice queens which I purchased sent me by express. However, as I saw little difference in favor of those which came by express over those which came by mail, I concluded that I must look elsewhere for the trouble. In looking over the past to see where the difficulty lay, I saw that such a queen sent me by a noted breeder had not laid eggs enough during two years to amount to as much as one of my ordinary queens would lay in two months, so I wrote to him asking if he remembered whether the queen was prolific with him or not. His reply was that she was unusually so, and that at the time he took her out of the hive she was keeping ten L. frames full of brood. Later on I received another queen of another noted breeder, for which I paid \$12, thinking to get the best there was in the country; but while she lived she was about the poorest layer I ever had, yet I was assured that she was "just perfection before she was shipped." Soon after this I commenced to send out queens myself; and during my experience as a breeder and shipper of queens, some five or six instances have come under my notice, of queens which proved of no special value as to prolificness after they were received by the purchasing party, while I know they were among the best, if not the best queens as to prolificness I ever had in my yard. While studying on these things, and looking for a cause, my eye chanced to rest on a few sentences regarding the shipping of queens, written by Bro. Hutchinson or Hayhurst, if I mistake not, in which he said that the removing of a queen from a full colony during the height of her egg-laying, and immediately send-

ing her off, caused her to be unprolific ever afterward, and that, to remedy this, they caged such queens a day or so before they send them off, which allowed them to rid themselves of their eggs before they were subject to the rough usage they must be subjected to in the mails. I may not have quoted this just right, but have given the impression it left on my mind at that time. Soon after this I saw where another of our brethren recommended the taking of queens out of full colonies, which were to be sent off, and leaving them in a nucleus a week before they were shipped, for in this way they became like a queen which had just got to laying in a nucleus, and such queens were scarcely ever injured by shipment. Putting the whole together I believed that the trouble lay in the sudden and unnatural stopping of a prolific queen from laying, so I went about experimenting to see if I were right. I caught two of my most prolific queens and caged them the same as I would do for shipment, giving them the usual number of bees for an escort, placing them in my shop, where I would occasionally handle them and give them about the usage I thought they must receive where going by mail or express. Others were caught and handled as carefully as possible, all being kept from the hive from one to two weeks, some even having the workers renewed on account of the first set dying from confinement, and upon returning them as heads of colonies again, at least one-third of them proved of little value after that, none of them coming up to their former prolificness afterward while they lived. Having solved the matter to my satisfaction, that queens were injured by suddenly stopping them from prolific egg-laying, and not by the usage they received in the mails, I next went about finding out if this unprolificness had any effect on daughters from these once prolific queens, but now almost valueless mothers, and am pleased to be able to go on record as saying that, so far as I can see, such injured queens give just as prolific daughters after their confinement as they did before. Since then my advice has always been, where I have had occasion to say any thing about it, that the receiver of a queen which he has bought for breeding purposes, go about rearing queens from her immediately, as soon as any of her brood is old enough to use for that purpose. In this way the buyer gets a fair return for his money, even if his queen does not turn out all that he would have her be, as has been the case with many I have purchased.

G. M. DOOLITTLE.

Borodino, N. Y., Sept. 17, 1888.

Friend D., the quotation you make was from some of Ernest's replies. Very likely he put it too strongly, for we state in the A B C book, and I have frequently stated through GLEANINGS, that occasionally a queen will never lay at all after a trip through the mails. This matter has come up because of uncharitable conclusions that have been drawn in regard to some of our queen-breeders. As an illustration: Some one who does not cultivate the spirit that "thinketh no evil," sends for a choice queen. She lays very little after being received, or never lays at all. He feels indignant, and sets the man down as a swindler, saying he did not believe the queen ever was a good layer. I should say, that per-

haps one queen in a thousand of those we send out by mail fails to lay after being received; and since you speak of it, I do remember that such reports seem to have come from the very best layers. Now, although this sudden stoppage of egg-laying may result in damage, I would under no circumstances want a queen kept three or four days out of the hive, before being mailed to me. Queens suddenly removed from the hive do not always stop laying eggs at once. I have many times seen them drop their eggs on the wires of their cage, and I have seen the accompanying workers greedily devour them as fast as they were laid. I think we have had reports of queens depositing eggs while in a wire cage, over the frames in a hive, and that the workers in the same hive placed them in cells from which to raise queens. Now, to carry the matter so far as to say that every queen carried by mail or express is injured, is, I think, going to the other extreme. As good layers as we ever had in our apiary were among the imported queens that crossed the ocean; and queens received every spring from the remote South have given as good results as any among those that were never removed from the hives at all. I should say, that certainly not one queen in ten suffers any injury whatever after she fully recovers from her trip through the mails. We should be very glad indeed to hear from those who have purchased queens largely. Are those that have taken a trip through the mails less prolific than those that have never been moved from their hives?—Your concluding point is a good one, and I would advise every one who purchases a high-priced queen to set about rearing stock from her as speedily as possible—not only on account of her passage through the mails, but because any queen is liable at any day to die or to stop laying. Just so with a valuable strawberry-plant. I would make it put out runners, and get some younger plants the very first thing I did; then, if you choose, make the parent plant bear fruit, to see what it is like. The only queen I ever owned, that lived to be four years old, was an imported one, and she was fairly prolific during the fourth season.

HONEY AND ITS ANALYSES.

SOME ADDITIONAL SUGGESTIONS FROM FRIEND STACHELHAUSEN.

THE question has come up, "Is it possible by chemistry to tell whether honey is adulterated or not?" I fully agree with the article of Prof. Cook, in GLEANINGS, page 640; but we know of some ways to detect certain adulterations.

To make it sure, the first question is, "What is honey?" This is not quite easy to answer, for the chemist. We know that honey of different flowers has quite different composition. Dr. Sieben analysed 60 different samples of surely pure honey, and found from 68 to 79% of dextrose and levulose—an average of 74%. Of dextrose there was 35%, and levulose 39%. Sometimes the quantity of both kinds of sugar is exactly the same; this was found in 11 samples. In 12 samples, more dextrose was

found than levulose, with the greatest variation of 45% of dextrose to 34% of levulose. In 37 samples, more levulose than dextrose was found; the greatest variation again being 23% of dextrose to 47 of levulose.

Cane sugar was found in less quantity. In 27 samples out of the 60, no cane sugar at all was found; 21 samples contained less than 2%, and 12 samples more than 2%. In *maximo*, 8.8% of cane sugar was found. Water was found in the honey to the amount of 16 to 25%, and other ingredients (non-sugar) 1 to 9%.

In the nectar of flowers is more cane sugar, sometimes cane sugar only. V. Planta proved, that in the nectar itself is a ferment which is able to change the cane sugar to reducible or invert sugar, so the nectar itself, if only evaporated, would by and by change the cane sugar. But we are nearly sure, that this changing of the sugar in honey is mainly caused by the saliva of the bees. So, newly gathered and not quite ripened honey may contain more cane sugar; but by the presence of the said ferments in the honey, the cane sugar is by and by changed half to dextrose, or grape sugar, and half to levulose, or fruit sugar. The older the honey, the less cane sugar will be found. Nevertheless, it is possible that some kinds of honey contain more cane sugar than 8.8%, so we can find a correct answer to the question, "What is honey?" by a large number of analyses, only done by quite the same method. Hereby some points should not be overlooked. For instance, from what flower is the honey? is it extracted or strained, warm or cold? from capped or uncapped cells? how old is the honey? etc. Here is a great field for chemistry.

Prof. Cook tells us that 12 and 16% of cane sugar has been found in honey. So we see it is not possible to tell with certainty that honey is adulterated by cane sugar except we find a large quantity, say 25% or more.

Another difficulty arises here. It is possible to change the cane sugar to dextrose and levulose before adulteration, at least partially, and then the adulteration is quite impossible to find out. Fortunately, adulteration by cane sugar will not pay nowadays. If the honey is adulterated, it is certainly by glucose, produced by boiling starch with water and a mineral acid. Hereby the starch is changed at first to dextrine, and then to dextrose, or grape sugar, and no levulose will originate. If the commercial glucose were entirely pure, we could not find out the adulteration, except by finding a surplus of dextrose, and would meet the same uncertainty as with cane sugar.

The lower grades of glucose contain a small quantity of gypsum, and this is easily proved by pouring barium chloratium into the solution, which gives a precipitate. But the best commercial glucose is never entirely pure. It is supposed that glucose contains 66% dextrose, 14% dextrine, and 20% water. But Dr. Sieben found another ingredient which ferments like dextrose to nearly the same quantity of alcohol, but has less reducible power. This is maltose. He found 22% dextrose, 16% maltose, 42% dextrine, and 20% water. This is glucose manufactured in Europe, from potatoes; our American glucose made from corn may be different, and it is necessary at first to know exactly what is the composition of this commercial glucose.

The adulteration by glucose is proved if we find a certain amount of dextrine. For this purpose the

honey is solved in water, and then alcohol will precipitate the dextrine. But sometimes pure honey, too, gives a precipitate, so this way is not quite sure. If we boil the honey two hours with 2% sulphuric acid, the dextrine is changed to dextrose, and so we can find how much *more* sugar is in the solution after boiling. But by this process a part of levulose is decomposed.

The polariscope is very uncertain, not only because cane sugar, dextrose, and dextrine, deflect the rays to the right, so we can't say which it is, or what caused this deflection, but the non-sugar in the honey too, changes the deflection in different ways. Nevertheless the polariscope is a help, and honey with a deflection to the right is very probably adulterated.

Dr. Sieben gives four new different ways to find dextrine with certainty, in his article, "Ueber die Zusammensetzung des Staerkesirups, des Honigs, und die Verfälschung des letzteren," in the *Zeitschrift des Vereines fuer Ruebenzuckerindustrie des deutschen Reiches*, 34, pages 837-883, Berlin, 1884, by Kayssler & Co.

Unfortunately I am not in possession of this article, and so I can't reproduce these new methods, but they are of interest to the chemists only; but if the chemical department of the Agricultural College is willing to experiment in this matter, much troublesome labor may be saved by reading the said valuable article.

We bee-keepers can learn many other things by these analyses for practical use. For instance, Prof. Cook asks: "Why will bees die on the purest commercial glucose, and thrive on good honey?" Sometimes the gypsum may be fatal to them, then the dextrine has to be changed to sugar, and this is done at the expense of bee-vitality in the winter—quietude, or the dextrine may not be digested at all, and so cause dysentery. Further, glucose contains no levulose, and this seems to be the best winter food. We do not know which is the correct answer.

Cane sugar, I believe, is a good and sure winter food, if changed to invert sugar artificially by the bee-keeper, by boiling with a small quantity of acid, or by the bees in the fall before capping. Non-invert cane sugar would crystallize, and the bees would need water to dissolve it, and then it needs more digestive power.

What causes the crystallization of honey? If the bees have candied honey for winter food, do they need some water to dissolve it, or is the temperature of the cluster always sufficient to make the honey liquid? If so, by what circumstances? Has candied honey of the same source another chemical composition than liquid honey?

In other journals the question was discussed: "Can sugar be made out of honey?" The chemistry gives an answer to this question. To extract the few per cent of cane sugar from the honey is possible, but would never pay. We could extract the grape sugar, or dextrose, and get about 40%. This sugar for commercial use would hardly be worth more than a good grade of corn sugar, and the reader will see that it is impossible to make the business pay. To change the dextrose and levulose to cane sugar again, we know of no way as yet.

Selma, Tex.

L. STACHELHAUSEN.

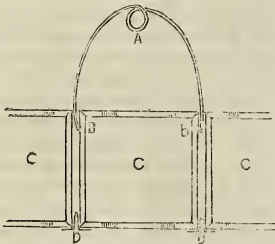
Friend S., you seem to be at home in this matter of the chemistry of the different sugars. I remember, when a boy, expressing

surprise that it was possible to convert starch into sugar, and cane sugar into grape sugar, but that no power of the chemist had at that time enabled him to convert grape sugar back again into cane sugar. If I am correct, we stand just here still, and it is therefore at present impossible to convert honey into sugar. I have a great many times been inclined to believe that the operation of candying really changed the honey in some respect. When one gets tired of liquid honey he can sometimes eat candied honey with relish; and a great many people say they do not like candied honey at all, when, if you give them the same honey after it has been melted, they pronounce it beautiful and delicious. Even spreading candied honey on hot cakes, if the cakes are hot enough, seems to give it quite a different taste. Now, is it not true that there is at least some sort of a change made when honey is changed to the solid state and vice versa?

REMOVING SECTIONS.

SHALL WE DO IT EN MASSE OR INDIVIDUALLY?

I HAVE just made and tried a small instrument for removing sections from the T super, and wish to submit a drawing of it for your inspection and comments. It is not a very great invention, as you will see. It can be made easily by any one, with a three-cornered file.



PERING'S IMPLEMENT FOR REMOVING SECTIONS.

It is made of steel spring wire, about the size of a common bucket-bail. The coil A is to cause the ends B B to spring outward when not in use, and will easily let go of a section. C C C represent three $4\frac{1}{4} \times 4\frac{1}{4}$ sections in the T super. D D, T tins. I use the T tins on top also, and when they are removed I push the instrument into the spaces made by the T tins, and, pressing the points B B, which are very sharp, into the section C, and by pulling upward, the points B B get a firm hold, and the section is easily and quickly removed. The coil spring A causes it to let loose easily. After the first four sections are removed it is easy enough to remove the rest. But it is a very difficult job to remove the first four; and one in this locality can not leave the super on the hive until all the sections are sealed, as it is spoiled by the bees running over it too much. With this instrument I can remove the honey without removing the super at all, but simply apply the instrument, remove four sections, either in the middle or at the side of the super; shake the bees off, and the remaining sections are more quickly removed and cleared of bees than if the bees are drummed and smoked

out, and then a "follower" be used. After the first row of sections is out, the rest are about as easily taken out and crated as to part and crate them after they are taken out *en masse*.

A. H. PERING, JR.

Clear Creek, Ind., Aug. 6, 1888.

Your implement in some cases may prove to be very handy. It is true, it is difficult to get every section in the crate filled out; and, if left upon the hive long enough to accomplish this purpose, the honey will become travel-stained. We should very much prefer to remove all the sections *en masse*, when the majority of them are capped over. Those not completed can be returned. At the close of the honey-flow it might be advisable to use your implement, to shift those partly finished to the center of the super.

EXTRACTING HONEY AND FEEDING SUGAR SYRUP IN ITS STEAD.

WILL IT PAY TO DO THIS WITH HONEY AT 15 CTS. A POUND, AND SUGAR AT 8 CTS.?

MR. ROOT:—I have a notion to extract *all* the honey from my 80 colonies, and feed sugar syrup for winter. I can sell the honey for from $12\frac{1}{2}$ to 15 cts. Do you think it advisable? I could have all extracted and fed up by the 15th of October. Do you think they would "cure" and cap the syrup that late? Where 20 lbs. of sugar makes 28 lbs. of syrup, can we count, in feeding it, the full 28 lbs. as that much stores for winter, or will the bees evaporate it down any? I don't like to trouble you this way, but I want your advice.

WM. M. YOUNG.

Nevada, O., Sept. 24, 1888.

Friend Young, I presume there will be some difference of opinion in regard to this matter. But my decision would be, from what I have experimented (and from what I have read about the experiments of others,) against it, provided, of course, the honey was sealed up in the combs, or mostly sealed up. In extracting at this time of year it will be impossible to throw the honey all out of the combs. Of course, the bees will clean it up, but this will set them to secreting wax, especially in connection with the feeding; and many little bits of comb will be built throughout the hive, causing them to consume enough honey or sugar syrup to secrete wax scales for the cappings, and these bits of comb mentioned. Now, my opinion is that you can not extract all the honey in the hive, and feed it back again to the same bees during the month of October, without losing at least a half of it. May be I am putting it too strongly; if so, I should like to have the Question-Box folks straighten me up. Twenty pounds of sugar will make 28 pounds of syrup, almost if not quite as thick as honey; but before the bees get it into the cells, and get it capped, there will be a loss of from one-fourth to one-third the whole amount. I do not exactly know where it goes, unless it be that it takes several pounds of feed to rouse the bees from their comparatively inactive state during the fall, and get them filled with honey, ready to secrete wax about as they

will during the height of the honey-flow. Besides this, most colonies will make a little spirit in brood-rearing, no matter how you feed them. If this is what you want in order to have young bees for winter, it may be all right; but my opinion is that we are just as often successful in wintering where the bees do not get "steam up" at all (if I may be pardoned for using the expression), during the month of October or later. I am not really satisfied that we need any brood-rearing in October or November either, for successful wintering. In summing up, then, the reply to your query is, that I would not do any thing of the sort, as you propose. If you are getting fall honey from autumn flowers, however, so that the bees are already filled with honey, and secreting wax to some extent, it would make quite a difference. But even in that case, I should prefer making them store their surplus honey in sections rather than to disturb the sealed stores which they have in the brood-nest.

SELLING HONEY ON COMMISSION.

H. R. WRIGHT, ALBANY, N. Y.

MR. ROOT:—I sent Mr. H. R. Wright, of Albany, N. Y., a few hundred pounds of honey in comb, safely put up—one-third white, one-third with sections commenced with white and filled in with amber honey, and the other third was clear buckwheat honey; and, too, I sent a man to help handle it, and it was got to Mr. Wright in fine condition; and when returns were made it came to 7 cts. per pound, out of which was taken express charges and commission, saying nothing about the expense of the man, his railroad fare to and from Albany, and expenses there, nearly two days. I could have sold my honey at home for 5 cts. per pound, and made money. It was the first time I had ever tried a commission merchant, and I thought it would be nice to get my money all in a pile, but the fun was all taken out of me, and I shall never send another pound of honey to be sold on commission. GREENY No. 2.

Patten's Mills, N. Y., Sept. 16, 1888.

Friend G., it does seem as if 7 cts. a pound for comb honey was a pretty small price, during this year of scarcity; but I am afraid you are a little severe on our friend Wright. You admit that your honey was mixed, and I believe that the general experience is that mixed honey is hard to dispose of at a good price. The clear buckwheat honey, however, it seems to me, ought to have sold for more than 7 cts. a pound. Did you not instruct Mr. Wright to sell it at once, and make quick returns? Another thing, if you did not want him to let it go at so low a price as 7 cts., your commission man should have been limited in price when the honey was consigned to him; and I am sure, my good friend, that you went to much more expense than was necessary. At the last national convention, the decision was almost unanimous that honey can be sent safer by freight than by express, to say nothing of the enormous expense of shipping by express. I should never think of sending a man along to help handle the honey, unless

I had something like several tons. As Albany is not very far away from you, this would make a difference. There is one advantage, it is true, in sending a man; and that is, you know just exactly how the honey stood transportation. You have not told us what size of section you used. It surely could not have been the small ten-cent sections which Mr. Wright so strongly recommends. In regard to sending honey to be sold on commission, I feel quite certain that a great many bee-keepers get a good deal better prices by selling at home than from commission merchants, as you state it; but they do not often get their money in a lump.

RAMBLE NO. 7.

THE CLAM-SHELL APIARY.

A SHORT ramble from my own yard, and I am again surrounded by the busy hum of *Apis mellifica*—this time in the apiary of Mr. Robert Bump. This brother bee-keeper is working on toward 70 years of age, and is afflicted with an inflamed ankle, and I gladly answer his call of distress, and am here to do work that he can not attend to. The request that came to the Rambler was to remove surplus boxes and to extract honey.



"THIS DON'T LOOK LIKE A GOOD BEE SEASON."

Mr. B. has a home apiary of 160 swarms in a yard in the rear of his house, upon ground sloping gently to the south, and shaded with fruit-trees and grape-vines. The hives are nearly all the old-fashioned box hives, or what was introduced into this part of the country many years ago as the Clark hive; dimensions, 10 x 12, and 14 inches deep. Mr. B. makes these hives yet, and does not take the bee-journals, averring that nothing new can be learned in them. The first thing I noticed as peculiar was a clam-shell on the cover of each hive. Now, if you ever noticed it, a half clam-shell has considerable cling to it when placed upon a board hollow side down; and if placed upon different portions of the hive it signifies different conditions inside the hive. I found if there was no clam-shell there were no crates on the hive, etc. I should say, that clam-shells are a great improvement over Bro. Doolittle's tacks and pebbles. The clean white inside can also be written on with a pencil. Let us have the clam-shells instead of slates.

I removed from the hives 85 fifteen-pound crates, not all completely filled with honey, and extracted about 100 lbs. of honey in a home-made extractor that worked finely except the wire cloth for sup-

porting the comb, which was too fine. The yield is a fair indication of the average yield in this locality for this year. Mr. B. makes his own hives and sections, and uses a horse-power for the purpose. His apiary is located in a little village of about a dozen houses, and no one is ever molested by the bees. There have been only 20 new swarms this season, but in a good swarming-season Mr. B. has had seven swarms all alight together. Wasn't that lovely? Let us all drop the bee-journals and adopt the clam-shell method!



KEEPING BEES ON SHARES, AND HOW IT USUALLY TURNS OUT.

Mr. B. has altogether about 250 colonies—160, as before stated, in the home yard, and the rest let out to various individuals in his own and adjoining towns. His plan for letting out bees is as follows: Any person desiring bees on shares must comply with the old-time regulation—furnish all material, hives, sections, etc., and give one-half of the honey and one-half the new swarms, and the bees are usually let out for a term of five years. My investigations revealed the following facts: The first 50 swarms that were put out in this way were to a man who owned a grist-mill, a cider-mill, a blacksmith shop, a potato-hook factory, a trip-hammer, a saw-mill, and a bee-keepers' supply shop. This man hired but little help; and as he did not make \$1000 the first year from the 50 colonies of bees, he wanted to return them. This fact, and the unprofitable fact that but little honey was realized to the owner of the bees, made him feel, as he forcibly expressed it, like kicking the lessee's coat-tails. The owner didn't want the bees back again, and found another man to take them. This man had a poor season, and lost nearly all during the winter. Another young man to whom he let 75 colonies had bad seasons and wintering troubles, and at the expiration of the term a misunderstanding to the amount of 15 swarms resulted, and, I suppose, thoughts of kicking again predominated.

To another man, about ten miles away, twenty colonies were let; and every time the owner called for honey there was none to be found; every season was bad, and the lessee was blue—every thing was going to the dogs. Still, the neighbors say he has sold honey. This man has also had disastrous wintering troubles; and when the final settlement comes there will be imaginary kicking again.

Others who have taken bees have made returns every year; but when the bees were returned, most of them would die the following spring. The parties were probably honest, but removing them at a wrong time might have had an influence toward

spring dwindling. In all of these cases the parties were inexperienced, and the object in taking the bees was to get started in the business by allowing them to swarm freely; if there was no loss in wintering, a large number of colonies could be obtained. In the five years, the original stock and many new swarms would be returned, for the lessee has the start he wanted and would give up running bees on shares. The method is, in my estimation, full of faults, and a source of much trouble. The Rambler advises (every time he is asked about taking bees on shares) the would-be lessee to buy one or more swarms of bees, according as he is able, and build up, and let "on shares" alone as a dangerous thing. Any one so inclined will be wise if he heeds—

THE RAMBLER.

Well done, friend Rambler. The clam-shell idea is, so far as I can see, an excellent one; and the moral you point us, both in the picture and in the description, is a good hit on a point that sorely needs it. I have known two friends, just like those in the picture, talk about some sort of partnership in the way of bee-keeping, with the best feeling imaginable, and with perfect confidence and faith in each other. In fact, this confidence in each other is one of the sources of trouble. A great deal of talking is done, but neither one of them thinks it best to put it in writing. In your case I notice they did have several documents; and especially were these documents produced when settling-up time came. Almost every instance I remember, there was dissatisfaction on both sides. The man who had the bees went to planning and figuring so as to come out without loss. The man who owned the bees planned and figured also; that is, he planned and figured what his neighbor ought to do. When they got through, each one had found the other out. This whole matter reminds me of our Wants and Exchange column. I do think, dear friends, it would save a world of trouble, and perhaps a world of unfriendly feeling, if we were all of us in the habit of paying cash down for what we want, and have it done with. If it is not possible to pay cash down, have it charged on a book, in plain dollars and cents, and let both parties look at the book if possible, and see that it is right. One trouble about taking bees on shares is, that, even where there is writing, there will be many points that writing does not cover. But after what I have said, if you do find it advisable to let out bees, or to rent them, make up your mind beforehand that you will not quarrel with your friend, even if it takes every bee and every drop of honey to keep peace. The trouble is, we are all human, and bee culture needs a good deal of brains. Well, the one who has the bees in charge is pretty sure to do the brain work in such a way as to favor himself. Now, if he has bought the bees right out it is perfectly right and proper to figure so as to get the very best possible result for *himself only*. He is not to keep in mind constantly that part of every thing is to be *divided*. If you want to know how a Christian should behave in partnership matters, read the account of Jacob and Laban, in Genesis, chapters 30 and 31.

BEES WORKING IN SECTIONS NOT OVER THE BROOD-NEST.

DR. MILLER GIVES SOME FACTS FROM ACTUAL EXPERIENCE.

ON page 634 of GLEANINGS, friend Doolittle says: "Did either one of you ever fully test the matter you are there talking about, or have you reasoned it out in theory?" Doolittle is one of the men I like to get into a struggle with. Did you ever see two or three bees trying to get a dead bee out of a hive? Part of the time they pull directly apart, as if fighting for possession of the dead bee, and then part of the time they pull together; but eventually, either by both pulling together or one giving up to the other, the dead bee is removed. A careless observer would say they were fighting about the dead bee. In the same way we may fight with each other. It matters not who gives up, so we get the dead bee out. To answer your question, Bro. Doolittle, I will say I have tested the matter hundreds of times, and have had supers by the hundred in which the sections were well started in the middle and at one side, while the sections at the other side were untouched. I think I never knew an exception to the rule, that the bees commenced work first in the sections over the brood-nest; and not till the supers were reversed did they commence work in the other sections, except in a very few cases, and then I think they were badly crowded. I had no theory whatever in the matter. It was simply the continued experience of several years.

And now I will try to comply with your request, friend D., to tell why your bees work well two feet or more away from the brood. Before I ever heard of contraction I had bees go as much as four feet away from the brood to store honey. The explanation lies in a single word—*heat*. Friend Root has already intimated as much. In addition to what he has said, there is a further reason why your bees act differently from mine. Your bees are closed up more than mine, so that the sections over the dummies are warmer than mine. I suspect mine are too open. My hives are ten frame, and the super does not extend over the whole width of the hive, but leaves a space of more than two inches uncovered. This produces the effect that no warm air comes to the outside sections, only as it comes sidewise from the other sections. You have helped to hasten a decision that hereafter I would have my hives closed up warmer.

Now, Bro. Doolittle, that you have whipped, let me ask you a question. "Did you ever fully test the matter," so as to *know* that bees work just as soon and as well over the dummies as over the brood-combs? If a super of empty sections is put on a hive, don't the bees commence over the brood first? Are you sure that, after the sections are all started, the bees do not work just a little more freely in those over the brood?

WAKING UP SLEEPY BEES.

Friend Root, on page 638 you think a man of my experience ought to have known enough to rouse up the bees, even if it was cool, by pouring warm feed over them. Yes, I reached that experience long ago, and have gone clean beyond it. I have learned by experience that there are times when such means are ineffectual to arouse them. In the ease under consideration, I did pour the warm feed

right over the bees; but if it roused them up enough to clean themselves up, they only quieted down again. You needn't tell me I should have daubed the sides of the feeder so that they would be led clear to the feed. I knew that too. I tell you, those bees wouldn't be aroused. But you live in Medina, and I don't suppose you ever have weather the first of October such as many of us have. I don't believe that matter of climate is considered enough. You and I, probably, would not quarrel about chaff hives or cellar wintering if we both lived in Medina or both in Marengo. You talk about your bees troubling peaches. Why, dear friend, my bees never touch a peach. They would have to travel miles and miles to find one. A peach-tree won't live here. Even the apple-trees that you grow will not live here, and we have a small list of extra-hardy ones whose names you would hardly recognize. So, many times I think we would understand one another better if we kept in mind the difference in climate.

BLOWING SMOKE IN THE ENTRANCE.

You say, page 640, a very little smoke over the top of the frames is sufficient. I rather like to give them a little whiff at the entrance, before I touch the hive at all. The guards, perhaps the most irascible in the whole hive, are there, and the slight jarring the hive receives in having the cover removed, and in other manipulations, is often sufficient to start them out for an attack; and, once out in the air, they annoy one for some time. Allow me to emphasize for beginners one word you use. Blow the smoke *over* the frames. It is rarely necessary to deluge the center of the cluster. Point the nozzle of the smoker across the frames, not down between them.

HOW TO GET RID OF MORELLO CHERRY-SPROUTS.

In reply to your question on p. 652, I had a hundred Early Richmonds on morello roots, and the latter sent out thousands of sprouts, which, if let alone, would have made an impenetrable thicket in a few years. Persistently keeping them cut down close to the ground is the only way I know to do any thing with them, and it is no worse than to keep down many other kinds of weeds. Part have been cut down with a scythe and part with a grub hoe, and I am not sure there's any difference. A large part of the ground has remained free from sprouts for a year or two. Whether they are entirely discouraged, or are only waiting their chance to come up again when they think no one is watching, I do not know. C. C. MILLER.

Marengo, Ill., Sept. 4, 1888.

Well, old friend, if there are no peaches growing on trees within miles of you, there certainly is great difference in locality between us. I have sometimes felt sorry for you to think you would persist in lugging your bees into the cellar when chaff hives answer us completely; but I did not for a moment dream that your locality was so much colder than ours that you could not raise apples and peaches—that is, such apples as we have. I take it all back, and beg your pardon.—In regard to those cherry-sprouts, I think I would chop the cherry-trees down, and plow every thing under before I would have such unsightly-looking brush as we see around cherry-trees in a good many places.

EUGENE SECOR.

DOT HAPPY BEE MAN.

C. C. MILLER.

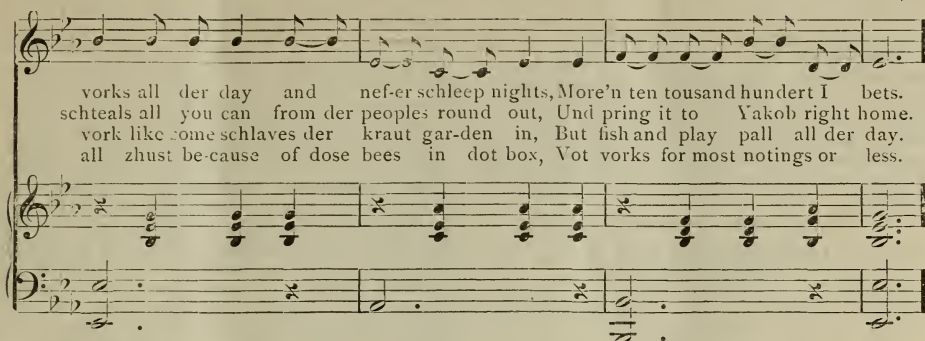
Lively.

1. O I ish vone of dose hap-py bee mans, I don't got to
 2. I schmokes mine pipe und I vatches dose bees, Und I laughs till mine
 3. O Katri - na mine lofe, see dat gold on der legs, Dem prings a half
 4. Ve moves on der town und lives like pig pugs, "In der clov-er field,"

vork an - y more; I loaf's all day on der ap-ple tree shade, Or
 scthomack goes schplit, Ven I see dem go schtrait for Hans Brinkerhoff's flow'rs Und
 pound ef - ery day; Ve sctharts a Pank quick ven dose bees get some svarms, Und
 so Yankees say; I'll vash mine feet from der dirt of der plow, Und

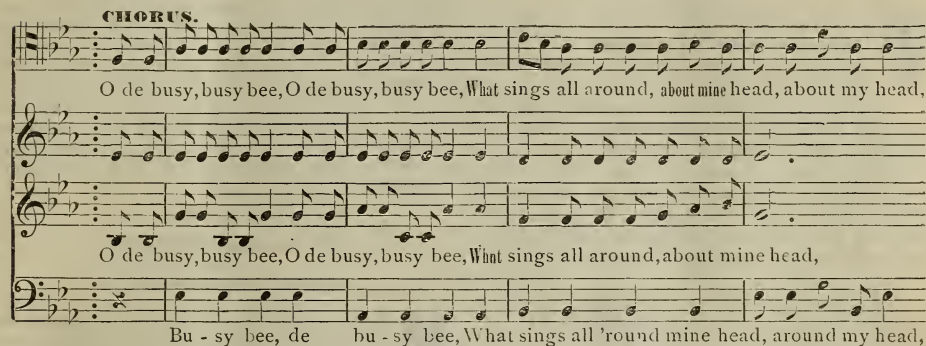
schmokes mine pipe on der door. For I haf boughted vone
 nef - er suck Yakob's vone bit. You see dot king bee hef
 prings in der vealth in dot vay. Mine frau her shall haf vone
 jines der Un-ion right a - vay. I runs for der ma-yor or

lec - dle bee - box, Zhust zhammed crammed full of dose pets Vot
 aw - ful schmart got Und him say to his vim-ens "Coomc. coome, You
 new gingham dress, Der childers don't got to home schtay Und
 congress - man too, Or pres - i - dent may be, I guess, Und

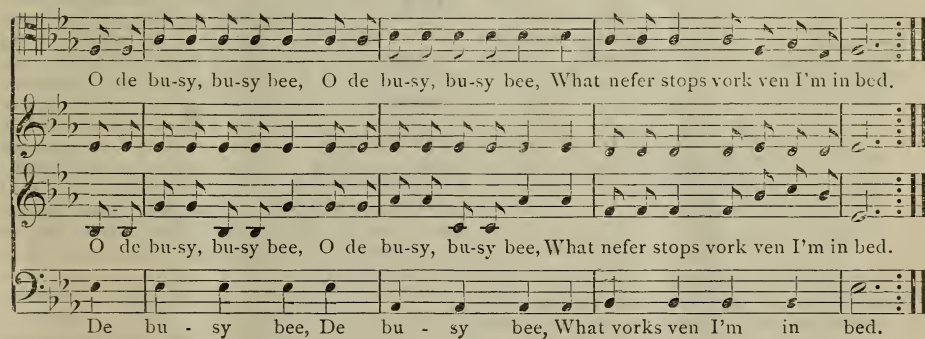


vorks all der day and nefer schleep nights, More'n ten tousand hundert I bets.
 schteals all you can from der peoples round out, Und pring it to Yakob right home.
 vork like some schlaves der kraut gar-den in, But fish and play pall all der day.
 all zhust be-cause of dose bees in dot box, Vot vorks for most notings or less.

CHORUS.



O de busy, busy bee, O de busy, busy bee, What sings all around, about mine head, about my head,
 O de busy, busy bee, O de busy, busy bee, What sings all around, about mine head,
 Bu - sy bee, de bu - sy bee, What sings all 'round mine head, around my head,



O de bu-sy, bu-sy bee, O de bu-sy, bu-sy bee, What nefer stops vork ven I'm in bed.
 O de bu-sy, bu-sy bee, O de bu-sy, bu-sy bee, What nefer stops vork ven I'm in bed.
 De bu - sy bee, De bu - sy bee, What vorks ven I'm in bed.

Desire has been several times expressed for one or two genuine bee-keepers' songs. The officers of the N. A. B. K. A., in accordance with this desire, thought best to have a couple of appropriate songs, to be sung at one or two sessions of the conventions to be held at Columbus. Very fortunately, they were not obliged to go outside of the bee-keeping fraternity to get either the music or words. Dr. Miller was selected as the music composer, and our friend Eugene Secor the composer of the words, and your humble servants to publish the same. The song above is the first one of the two that have been prepared; and although we anticipate the next national convention about two or three days in its publication, we do so that our readers may have a little time to "practice up." Both the music and the words are unique and lively. Our friend Secor is to be congratulated on catching the

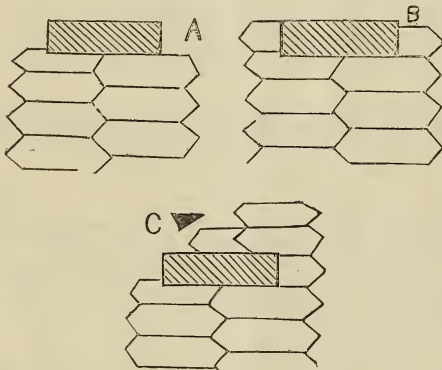
German idiom, and so adroitly weaving it into a spicy poem. Friend Miller is to be congratulated on being able to compose a piece of music which fits the circumstances so well. Some of our readers, and especially those whose articles have not appeared, for the reason that they have been crowded out, may feel that we are taking space for something that is not so important as some other matter. Dear friends, variety is the spice of life, as you have heard so often. A journal must not be all long articles, but it must have short ones, notes and queries, numerous other departments, and the whole assisted with appropriate engravings; yes, and a lively song occasionally on its pages will greatly vary the programme as well as at the convention. We doubt not there is some one in nearly every one of the eight thousand families and over, where GLEANINGS visits, who will be able to play this

piece of music, and perhaps render the words with the voice in accompaniment, with all the "vim" characteristic of "Dot Happy Bee-man." The next song will be published in our issue for Oct. 15. If you are not able to attend the convention, we hope you will be able to hear the song at home. We wish you might all hear Dr. Miller render it in his bright happy way, together with the peculiar German accent which he has the reputation of "getting off" so well.

HOW WIDE SHOULD WE HAVE OUR TOP-BARS?

WHY THE BEES BUILD BRACE COMBS ABOVE THE TOP-BARS.

THE wired frames sent me have caused me quite an unexpected annoyance, the knowledge of which may be of some use to the bee-keeping fraternity. Up to this time I made my own frames with top-bars one inch wide and three-fourths of an inch thick. With such top-bars I had very little brace comb built between the frames and the section boxes. I do not use honey-boards. With yours, brace combs are built everywhere. Upon investigation it seems, first, that the bees draw the foundation and build the comb longer than the width of the top-bar, Fig. A.



Then, finding the cells unsupported on the upper side, they continue to build on the side of the bar, Fig. B; and finally on the top, Fig. C. At last they fill between the top-bar and the section boxes or the honey-board, if one is used, leaving only the passages necessary to their going and coming. The inference is, that, if the top-bar were as wide as the comb is thick, there would be no such prolongation. Perhaps the extra thickness of the top-bar would also help.

ADRIAN GETAZ.

Knoxville, Tenn., July 4, 1888.

Friend G., I am glad you have called up this important question. Years ago I made numerous experiments on a large number of hives, in regard to the width of top-bars, trying them all the way from $\frac{1}{4}$ of an inch wide up to $1\frac{1}{2}$. The latter made the most trouble and inconvenience of any widths tried. The $\frac{3}{4}$ -inch top-bar pleased us in some respects, but it was open to the objection you give in your drawings. But it seems to me you have started out with a wrong impression in regard to the width of

the cells in brood comb. I decided that $\frac{3}{4}$ inch was as near right as we could get the average thickness of brood comb; therefore when the brood was carried clear up to the top-bar, the sides of the top-bar would be exactly level with capped brood, and I think you will find this is correct. Now, it is true that the bees often store honey for an inch or two above the brood; and if they are crowded for room, these honey-cells will project beyond the top-bar; but after using top-bars one inch wide, $1\frac{1}{4}$, and $1\frac{1}{2}$ inches, for a series of years, we decided we had least trouble with those $\frac{3}{4}$; and if you have not experimented very long in the matter, I think you will come to the same conclusion. The extra thickness, up and down, of the top-bar, will certainly help the matter of brace combs; and one of our Canadian friends, Mr. J. B. Hall, by having top-bars over one inch in thickness, accomplishes pretty nearly the same result that Heddon does with his break-joint honey-board; that is, the bees do not fasten the crates holding the sections to the top-bars, with wax and propolis; but can we afford to have our top-bars an inch or more through, up and down?

BUGS AND BEETLES.

HUMMING-BIRD MOTHS, ETC.

MR. M. A. KELLEY, Milton, W. Va., sends me a "bug"—it is a beetle—and a "worm"—it is really a moth larva, or caterpillar, which he asks me to name in GLEANINGS. He says they are particularly interested in the "worm." The beetle is black, over an inch long; and as it is new to my collection I am very much pleased to get it. It is one of the elaters, or spring beetles, of which I have written several times of late. The grub, or larva, probably lives in rotten wood on which it feeds. I regret to say that the larva was, owing to delay in the mails, so dried up that identification was impossible. I can only say that it was probably a moth larva—I think one of the *Noctuidæ*, or night-flyers. I hope Mr. Kelley will send more.

Mr. W. P. Root writes, "Please name the beautiful moth which I send you." He says, very truly, that it has a "sugar-tooth," and looks like a humming-bird. This is one of our diurnal sphinx moths, and is known to science as *Hemaris diffinis*. All of the *Sphingidæ* are called, very properly, humming-bird moths. They all have large bodies, strong narrow wings, and very long tongues. Thus it is that they can—humming-bird like—poise themselves some distance from a flower and sip the nectar by use of this long tongue. Most sphinx moths are night flyers or twilight flyers, and, like the common tomato-sphinx, are usually gray in color. A few, like the one sent, fly in the hottest sunshine, and are very beautiful. This one is brown and buff, and, with its transparent wings, is very handsome. Like all moths, and butterflies as well, it is robed with minute, delicate, and very beautiful scales, which, from their delicate and varied colors, give the beauty which is so much admired. In this specimen the scales were mostly rubbed off, and so, as friend Root says, "it has lost most of its brilliant gloss." In making our collections we are careful

to preserve all this beauty. I have had a class of forty earnest hard-working students in entomology this summer. All have made fine collections, and every one had several species of these fine diurnal *Sphingidæ*. The larva of this one feeds on the honeysuckle shrub and snowberry. It is green, varied with pink, brown, and yellow. To any one rightly brought up it would be called beautiful at once. It has the caudal horn, so common in this family of moth larvæ, and which is familiar to nearly all in the "tomato worm"—should be tomato larva, or caterpillar. How often it is stated that these fine larvæ are dangerously poisonous, and that one thrust with the horn is quickly fatal. Of course, this is all the veriest nonsense. My children have no more fear of these beautiful larvæ than they would have of a little bird. I am very glad that it is so. I hope soon to give illustrated articles in GLEANINGS, showing how to collect and preserve these gems of nature, so all its readers may learn to study them, and thus add to life's enjoyment.

You ask about figures of beetles, page 674. The line beside an insect figure gives the true length when the drawing is enlarged. As the proportions are preserved, the line enables us to form a correct impression of the insect. In the figure in question, the larva is not shown. There are two species shown in the imago, or mature state, and one—that to the right above—pupa.

You ask if species of *biden*s—beggar-ticks—are the same as Spanish needles. I think so. I remember some one, very likely it was you, once told me that he called these beggar-ticks Spanish needles.

You ask if the galls are ever a normal growth. No, never, no more than is a tumor on a man. In case of galls, the sting of the insect is the disease which impels the false growth, and disfigures the plants. The insect injures the plants that their own young may have home and food. Some of these galls are very handsome, as witness some of the oak-galls.

What you say of bees and peaches is, I feel sure, the truth in reference to bees and all fruit. Bees do not injure or molest perfectly sound fruit.

I was interested in what Mr. Ritter said about moths. I think with him, that it is modern methods rather than the Italian bee that has banished the moth. The bee moth is the only individual, so far as I know, that may justly hold a grudge against our good friend Langstroth.

The picture and biography are *very kind* to me. It is very pleasant and helpful to hear such good things thought and said of us. It makes us anxious to be more worthy of them.

Agricultural College, Mich.

A. J. COOK.

SOME INTERESTING FACTS AND OBSERVATIONS CONCERNING DRONES.

DO THEY SOMETIMES CONGREGATE IN SWARMS IN ANY PARTICULAR LOCALITY NEAR THE APIARY?

LET me give some facts that have come under my own observation regarding drones. About the middle of May, 1887, while walking south down the creek one day, looking at the prospect for white clover, I heard what seemed to be a large swarm of bees to the east of me. There was no honey being gathered at the

time; and its being so early in the season, I was sure it was not a swarm. My curiosity led me to the spot whence the sound came, and there in countless numbers above my head were drones darting hither and thither after each other, and after every thing else that chanced along. The area covered by them was about the same as a large swarm of bees; but the intensity of the noise they made was equal to that of three swarms of bees. Only the lower drones could be seen. The bulk of them were high in the air, 100 ft. or so. By going a few rods to any side, the sound would come from the common center, which showed that they were all together.

This particular spot is about 80 rods south from the apiary, in the center of 20 acres of timber that had been cut off and is growing up in second growth. Where they congregate, the ground is more open than the rest. Between that and the apiary, or anywhere else in the timber, no sound of bees could be heard. And now comes the important part. Day after day, when drones were flying, I would go to that spot, and there they would be, as many as ever. I have seen them dart at the devil's darning-needles, and have often amused myself by throwing up small chips or pieces of bark, to see three or four follow them nearly to the ground. There were 165 colonics in the apiary then, before I divided it. This year there are over 100 colonies, and the drones still fly in the same place. I was throwing at them just the other day. I believe nearly all the drones on the wing congregate there. My observations have extended over two seasons, and any one can see that I have made no hasty conclusions. If there should happen to be a doubting Thomas among those who read this, I should like the privilege of dispelling that doubt. And now come the questions: Do drones all congregate at a particular spot for the purpose of mating with the young queens? Why did they select that particular spot two years in succession? Last year there were a good many other bees in the neighborhood; this year very few.

ROLAND SHERBURN.

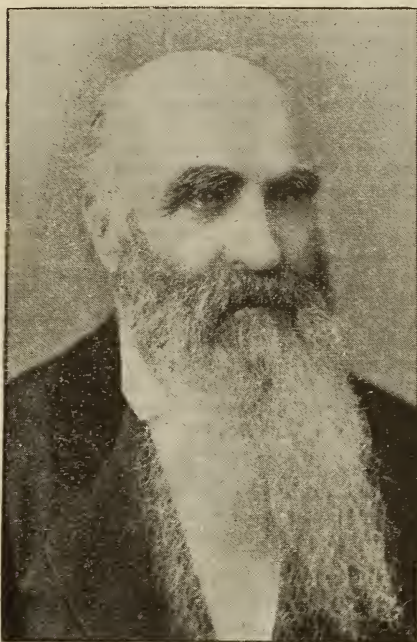
Lone Tree, Ia., Sept. 2, 1888.

Friend S., you have given us a very valuable contribution in this matter of drones congregating in large numbers in certain localities. You may remember that the fact has been for years given in the A B C book; but I was not before aware, however, that they gathered at some spot every day or every year. It might be interesting for beekeepers to visit the spot, to make observations. My opinion is, that the location is favorable on account of the freedom from wind, plenty of sunshine, and may be some other reasons. Virgin queens would probably be at once attracted by the loud roaring, and become speedily fertilized, with very little chance of meeting drones from the same hive the queen came from. Your experiment of making them chase chips indicates pretty clearly the purpose for which they congregate. Very likely all the drones for miles around will be found in this gathering, and, as a matter of course, the more bees are kept in a locality, the larger will be this congregation. I think it quite probable that such a spot is to be found every day when drones fly, near any large apiary or apiaries.

CHAS. DADANT AND SON

AS HONEY-PRODUCERS AND WORKERS OF COMB-
FOUNDATION; A BIOGRAPHICAL SKETCH BY
DR. MILLER.

HERE are the pictures of two men, known the world over as the largest manufacturers of comb foundation. When I have said that much about them, all but the latest beginners will know that I refer to Chas. Dadant & Son, of Hamilton, Hancock Co., Ill. The production of this sort of pictures is to me simply a marvel. In comparing the pictures with the photographs, the minutest detail seems to be exactly reproduced, so that, to all intents and purposes, the readers of GLEANINGS have the photographs in a place where they are not likely to be lost. There is a lack of the frank, good-natured expression



CHARLES DADANT.

usually seen on the face of the younger man, but the picture has precisely the same expression as the photograph. In the case of the elder, there is, it seems to me, a nobility and intelligence of expression in the photograph that is not entirely brought out in the picture. The only wonder, however, is that there is so little difference.

The father, Charles Dadant, was born May 22, 1817, in a village of the old province of Champagne (now departement of Haute Marne), France; while the son, Camille P., was born in Langres, France, April 6, 1851. Very early in life the father showed a strong liking for bees, which developed in a practical form as soon as circumstances favored. He first engaged in the battle of life as traveling agent for a wholesale dry-goods firm, and afterward became a wholesale dry-goods merchant himself; and after leaving this business he associated himself with his father-in-law in the management of a tan-

nery. Grapes were raised in large quantities in the region of his birthplace, and, being thus familiar with their culture from childhood, he determined to try grape-growing in America, and, with that intention, came to the United States in 1863. Not knowing a word of the English language, he commenced its study by the help of a dictionary, and with such success that, within four years, he was able to write articles for the press. While this mode of study gave him fine command of the language for writing, it left him somewhat at fault in the matter of pronunciation; and many who have read his clearly expressed and forcible articles might be surprised at the difficulty they would have in understanding them if read aloud by the man who wrote them.

In 1864 he obtained two colonies of bees from a friend, and tried the movable-frame hives, *side by side* with the old European "eke" horizontally divided hives. The latter were soon cast aside, and in 1868 he made an effort to get the apiarists of France to try the Langstroth system. For this he was rebuked by Mr. Hamet, the editor of the French bee-journal entitled *L'Apiculteur*, who, instead of leading in the van of progress as he might have done, has never ceased his efforts to block the wheels, leaving magazines started later to do the work he might so easily have done.

About this time Mr. D. tried to import bees from Italy. In 1873 he made a trip in person to Italy, but the enterprise was not entirely successful. In 1874, however, he succeeded in importing 250 queens from the apiaries of Giuseppe Fiorini, of Monselice. These importations were kept up for years.

In 1871 his bees had increased so much that his first out-apiary was established, and the number of colonies steadily increased, until 1876 there were five apiaries of from 60 to 120 colonies each, and about the same number have continued since that time. Previous to this, however, in 1874, the son, C. P., who might be said literally to have been raised among the bees, was taken into partnership, and for the last 14 years there has existed the well-known firm, Chas. Dadant & Son.

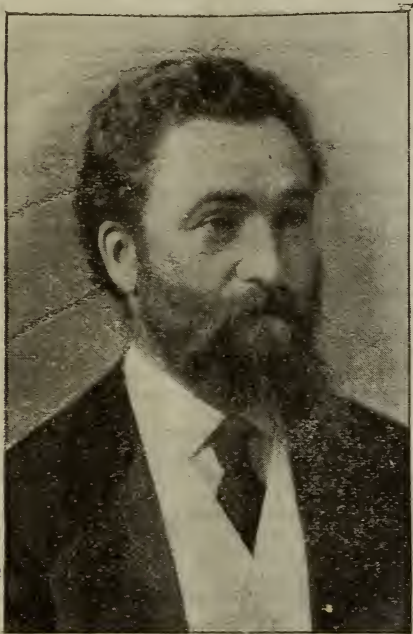
In 1878 they began the manufacture of comb foundation in a modest way, making that year 500 lbs., and rapidly increasing, until in 1884 they made thirty tons lacking about a thousand pounds, or, to be more exact, 58,928 lbs. Their total product for the first ten years was 280,366 lbs. A late number of GLEANINGS contains some account of their factory, by friend Calvert, which I need not here repeat.

The immense market they find in this and other countries is accounted for by the extreme care they take in having every inch of foundation that leaves their hands, of the highest grade. One time I wrote them my preference for a certain kind of foundation, and they replied that they had never been able to make that kind to suit themselves; and although I am confident they could have made it as good or better than any one else, rather than risk their reputation for making perfect work they wouldn't make it at all, and I had to go elsewhere.

The Dadants have established a very enviable trade in extracted honey, of which they make a specialty. From their own bees in 1884 they extracted 36,000 lbs. They believe in giving the queen full swing at all times in ten frames, and, as in foundation, they set a high mark for the quality of

their honey. Think of leaving all the honey on the hives till the close of the season, and then having every cell to uncap! And yet that is exactly what they do. No wonder they can hold their trade.

Mr. C. Dadant is an honorary member of perhaps a dozen European bee-keepers' associations, among which may be mentioned the Italian and Swiss associations. He writes more for European papers than for American, and has been one of the main expounders of American methods in Europe. He is one of the principal contributors of the *Revue Internationale d'Apiculture*, in which publication his portrait was given a few years ago. The Langstroth-Quinby-Dadant hive is used largely in the Old World, under the name of the Dadant hive, simply because he introduced it there.



CAMILLE P. DADANT.

He published a "Petit Cours d'Apiculture Pratique" (Short Course in Practical Apiculture) in France in 1874. This is completely exhausted, and he now has in preparation a translation of the revised work of Langstroth for French publication, simultaneously with the American edition. The latter is now in the hands of the printers, and is looked for with much interest, the leading Canadian society of bee-keepers having purchased in advance a copy for each of its members.

Besides the son, Camille P., Mr. Dadant has a daughter, Mrs. Emil Baxter, of Nauvoo, Ill. C. P. was married in 1875, and has six children.
Marengo, Ill. C. C. MILLER.

Friend M., the facts you give are very interesting indeed; and my experience with the Dadants agrees with your statements exactly. Some years ago, when they first commenced to import queens from Italy, a good deal of fault was found because these specially imported queen-mothers were not

large and yellow, like our American-bred queens. One man particularly was so uncharitable as to declare that they sent him nothing but poor hybrids, or, worse still, bees that were almost entirely black, when he had paid for a queen direct from Italy. In vain did our old friend Dadant insist that the queen was just what he sold her for. When the matter was submitted to me, however, I surprised both parties by suggesting that, if anybody wanted to swindle people by substituting home-bred queens, he would pick out the handsomest and lightest-colored queens, and not send out those that are almost black. I believe there was no further trouble after that; for after our hasty friend saw the workers hatch out, he was abundantly satisfied. You can hardly blame foreigners for being somewhat suspicious of the Yankees; but, as a general thing, when they are satisfied that a Yankee is *honest* and *straight*, they will stand by these tried friends in a way that we Yankees sometimes fail to do.

BUTTON-BALL.

THE ADVANTAGE OF HAVING MANY IRONS IN THE FIRE; A POINTER FOR SPECIALISTS.

FIG. 155, page 283 of Prof. Cook's Manual, is an excellent representation of the button-ball, or button bush, as mentioned by Prof. Cook, on page 285 of his Manual. On page 673 of GLEANINGS, in speaking of the button-bush, Mrs. Harrison asks, Will some of your readers tell us more about it, and whether it has off years, like basswood?

Well, yes. There are thousands of acres of it in the marshes of this, the Illinois River bottom. I have lived in this place five years, but we got no button-ball honey until last season. It bloomed about three weeks, and gave us (wife, children and I) something over a ton from this source. This season it has bloomed about six weeks; and up to date we have taken off the hives about 2300 lbs., all button-ball honey. There is about a ton on the hives, and the greater part of that is button-ball.

The cause of its failure in previous years was ice breaking it down during the winter; and its continuing so long in bloom this season was caused by the water. When it commenced to bloom it was standing in water up to its "chin." The water commenced going down; and as the water continued to fall, new shoots put forth, and new buds kept coming, so that there was considerable button-ball bloom yet last week.

We obtained nearly three tons of honey last season from 98 colonies in the spring, and went into winter quarters with 114 colonies. We commenced this spring with about 108 colonies; and while we have not a big crop, we have a fair yield up to date, with a good prospect ahead, if the weather proves favorable. Our neighbors got almost nothing last season, and a little less, so far, this season.

How is this for those "specialist" bee-keepers who do not happen to live in a "special" locality? Too many irons in the fire, I know, is not a good thing; but I am not quite sure that it is not better to have some of them burn occasionally, than to have only one, and that one so cold you can not work it. What say you, friend Root?

We have raised and sold \$40,00 worth of melons; \$10,00 of early peas, and \$5,00 of Corey corn, and raised corn enough to keep our 100 chickens, ever since the corn was ripe enough for them to work on. We have 20 bushels of potatoes in the cellar. We had an abundance of radishes, lettuce, onions, beans, and cabbage, in their turn; a flower-garden of four square rods, with some forty or fifty different kinds of flowers, and many of these are represented in fifteen or twenty different shades of color.

We have five children. The oldest, a daughter, will soon be thirteen. My wife tips the scales at about 110 lbs., while my average is about 123. Rather a small couple, is it not? and yet we do not feel that we are worked to death. S. A. SHUCK.

Liverpool, Ills., Sept. 6, 1883.

Friend S., some of our boys a few days ago were lugging home great clumps of button-ball root, in order to cultivate them for the bees. I told them it would be much easier to move their bees to where the button-balls flourished than to move the button-balls to where the bees flourished; and I also added that I felt pretty sure the button-ball was not a very certain honey-plant. I am very glad of the facts you give us. I wanted you to tell us, however, more about the quality of the honey. Is it first class? I agree with you, that it is about as dangerous to "put your eggs all in one basket" as it is to have "too many irons in the fire."

CUCUMBER HONEY.

HONEY FROM BLOSSOMS OF CUCUMBER-VINES OF A LARGE PICKLING ESTABLISHMENT.

I SOWED one acre of Japanese buckwheat, the seed got of you through Mr. Sykes, of this place; and although it has done very fair for such a dry season, the bees have worked very little on it, for the reason they found something that suited them better. A firm has started a pickle-factory. They got farmers to agree to plant from one to ten acres of cucumbers, and they have bought about 10,000 bushels of pickles, and the bees have worked constantly on them since they began to blossom. I think Mr. Sykes will have 1000 pounds of comb honey, almost all from that source. The last of July he said that he had not got a pound of comb honey, and that the bees were taking the honey out of the surplus chamber. He has from forty to fifty stands of bees in the Heddon hives. He contracted the brood-chamber after swarming; and as cucumber honey came on he had swarms all through August that he had to put back in their hives after cutting out queen-cells. I have 17 stands from 8 in the spring. To one small swarm, June 29, black bees, I gave a virgin queen, put on eight Simplicity frames of partly drawn combs. Not having sections to put on, I left them without examining until Sept. 1. One frame was full of sealed honey, and in all eight there was not to exceed one frame of brood, nearly all sealed, both honey and brood; all cells had something in them. The honey is very nice, and looks like basswood. So far as I have tasted it I think it is equally good. We have had very dry weather since the first week in August, and cucumbers are failing; but they have done better than goldenrod, as that is so dried that the

bees scarcely work on it. All last year they worked on it strong.

IRA V. REEVS.

Pineckney, Mich.

OUR EXCHANGE DEPARTMENT OF ADVERTISING.

SOMETHING ABOUT THE DIFFICULTIES AS WELL AS CONVENIENCES OF THE ARRANGEMENT.

FOR some time past I have been a little undecided as to whether this department was, in the end, one that brought more good to our friends than it did evil. Ever since the department commenced, there have been more or less dissatisfied people. For instance, somebody advertises to trade a pair of ducks for bees. A correspondence opens up, and the trade is made. But the duck-man writes to the editor of GLEANINGS that the bee-man swindled him. There were not as many bees as he agreed to give him; they were not Italians, and they were miserably put up, and may be directed wrongly besides, and he thinks we should advertise the bee-man as a swindler. Remembering the virtue that "thinketh no evil," we write a kind letter to the bee-man, and he replies that the one who has been swindled is *himself*. The ducks were not as represented, and were hardly worth the charges, and he says that the duck-man is a mean fellow, untruthful, and dishonest besides. In despair we write a letter enjoining charity to both parties, and exhort them to settle the matter, if possible, in a way that will be satisfactory. Now another case.

A man had more wagons than he needed, but he did not have as many bees as he wanted, so he advertised that he would trade wagons for bees. I knew pretty well when the advertisement came that he would dispose of the wagons, without any trouble. So he did. There were not wagons enough to go round. One of our neighbors was put to considerable inconvenience in consequence, and thought he ought to have damages. I believe the matter was finally fixed up, but it suggested a caution to those having only a limited supply of certain articles to dispose of. Be careful what promise or encouragement you make. Perhaps the only safe way would be to give each applicant the refusal of the article or articles till such a specified date as will give him plenty of time to answer. Then if he does not take up your offer you can notify the next man; and so on. The worst case in the lot is substantially as follows:

A Mr. Ed Hitchcock, of Lockport, N. Y., advertised four small Yorkshire and six Poland-China pigs for exchange. A correspondence was opened up, and Mr. Hitchcock wrote very fair-looking letters. The consequence was, that one of our bee-folks away down in Texas shipped quite a large lot of bees all the way to Lockport, N. Y. Mr. Hitchcock came and looked at them when they arrived, and told the agent he would come and get them as soon as he could secure the money to pay the charges; but the bees were left to die at the express office. Our Texas friend lost her bees, be-

sides having a heavy express bill to pay. Mr. Hitchcock did write a letter, with an apology, to the effect that his pigs got the "black-tooth," or something, and all died. When we tried to hunt him up, the postmaster informed us that Mr. H. hadn't called for his mail for a long time, and nobody knew what had become of him. And now it transpires that another friend, Mr. S. Whann, of Raymilton, Pa., had a similar correspondence, and sent him some bees, which he took from the office, but that was the last that was heard of him. If any of the readers of GLEANINGS can tell us any thing more about Mr. Hitchcock, we shall be very much obliged to them. We have settled with our friend in Texas; and if our good friend Mr. Whann will tell us how much we owe him for once more making a blunder in accepting advertisements, we will try to make good his loss.

I am not sure, dear friends, but we shall have to give notice at the head of our Exchange Department that we can not be responsible for misunderstandings, disagreements, or disappointment resulting from any transaction that may grow out of offers made in this department; and we are going to take more pains than we have been doing to see that none but good men get their names into this department. If our friend Hitchcock meant to do right, but has been unfortunate in other ways than with pigs, we should be glad to give him a hearing and a helping hand. We think, however, he should either answer letters himself or get some other friend to do it for him. If he has become bankrupt, let him come out squarely like a man, and own up. Any thing gives people a better impression than neglecting to reply to those he has wronged.

HONEY FROM GALLS.

WHITE AS BASSWOOD, AND FLAVOR EXCELLENT.

WHEN I wrote of galls a few days since, I did not know that I was treating a subject of special interest to bee-keepers. To-day I received a very interesting letter from Franklin Wilcox, Mauston, Juneau Co., Wis. He sends me a twig of the scarlet oak (*Quercus Coccinea*). On the end of several of the buds are dark-brown seed-like bodies, which, when examined, prove to be galls. Each gall is hollow, and within is the little larval gall! Like all gall larvæ of the cynip family, it is white with a brown head. Now hear what Mr. Wilcox says:

"I take the liberty of sending you some samples of oak buds that are yielding fine clear nectar in considerable quantities. When stored in combs, it is as white as basswood honey. It dries up in the middle of the day, but in the morning it oozes from the end of the buds (really the end of the galls) in such quantities that it hangs in drops as large as can be dropped from a bottle. When the twig is jarred by wind or other cause, the drops fall. It is most abundant on thrifty trees."

This is a very interesting matter. I hope to rear the gall-producing fly, that we may know to what insect we are thus indebted. I can taste the honey or nectar plainly on the twig, and it seems excel-

lent. I do not know why Mr. Wilcox may not have it again, though he thinks he will not. The galls are not going to die this year, surely. I shall try to get more galls and a specimen of the honey for analysis.

A. J. COOK.

Agricultural College, Mich.

THE HONEY SEASON IN ILLINOIS.

THE VALUE AND IMPORTANCE OF HEART'S-EASE AS A HONEY-PLANT.

WHEN I read that foot-note in GLEANINGS for Aug. 15th, to the effect that "the season is now entirely over for honey," I felt like sitting right down and giving you a piece of my mind, as well as some information in regard to the honey-yield we were expecting in this part of Illinois. On reflection, though, I decided that it was a mistake which would be corrected soon enough without any aid from me. Besides, I thought that perhaps I had better not announce the coming of the honey before it was here. It had begun to look as though flowers had forgotten how to yield honey. They had deceived me so often that I scarcely dared trust any of their promises until I saw the fulfillment, and looked with a half-doubtful though hopeful eye on the banners of promise raised everywhere by the hosts of heart's-ease.

Rightly were you named, O heart's-ease! You have brought ease and comfort to the heart of many a poor bee-keeper, almost despairing under the burden of successive seasons of disappointment and failure, for the honey is here. Once more the perfume of nectar fills the air of the apiary, and the hum of the heavy-laden bee sounds as sweetest music in the ear of the honey-producer. Let us but have favorable weather, and we shall yet gather a good crop of honey.

From all reports, I should judge that the early yield was better here than in some other places, though it was little enough here. White clover yielded almost nothing, though in some places it was quite abundant. Basswood yielded well for four or five days, but there is so little basswood in my neighborhood now that it did not amount to much. Still, it was the first time I have ever been able to secure any considerable quantity of basswood honey unmixed with that from other sources.

Sweet clover yielded more than any other plant up to the middle of August, but the honey was not of as good quality as usual, as it was mixed with that from various other plants.

All summer I had been expecting a good fall yield from heart's-ease, and in this I was not disappointed. The bees began to work on it Aug. 20th, though it had been in bloom for some time. In four or five days the hives were rapidly filling with honey; and though the weather has been unfavorable since, as it is getting very dry, with some days almost too cool for the bees to work, some strong colonies have stored over 50 lbs. of honey. The honey is of excellent quality—not comparing, of course, with the best white clover, but thick, light-colored, and of good flavor.

This modest and unassuming plant has thus come again to our rescue, and given us a very good share of a honey crop *after every thing else had failed*. If we should have a good rain, followed by a couple of weeks of hot or even reasonably warm weather, we

shall have a large crop. It deserves to be placed at the head of the honey-plants of Illinois. The largest yield I ever saw came from it; and the rapidity with which the bees gather from it is equaled only during the best basswood yields. Yet to most people it is "only a weed." Perhaps it is only a weed, but it is not a bad weed. In fact, I know of no objection to it except that it is a weed. It has no burrs to catch the clothing or the hair of animals, no winged seeds to be scattered far and wide by the wind. It does not grow to an objectionable height, and is very easy to kill. Sometimes it grows a little too freely among small grain; but as a rule it does not make much growth until the grain is harvested, when it comes up in the stubble. In the cornfields the corn gets so large before it grows much that it seems to do little or no damage. But it is of no earthly use save to produce honey, and so its beauties and virtues will remain unappreciated, save by the bee-keeper.

JAMES A. GREEN.

Dayton, Ill., Sept. 8, 1888.

Friend G., I am very glad indeed to have you give us such a testimonial in favor of heart's-ease. It was Ernest who made the remark that the honey season was entirely over, and he forgot to add, "in many localities." As there seems to be a little misunderstanding in regard to the plant called heart's-ease, will some of the friends please have a photograph made of a good specimen in full bloom. We would have it done here, but I have not seen any this season. A cut of one of the blossoms enlarged would be desirable. The leaves are quite large enough for illustration—perhaps too large; but they can easily be reduced. I presume we are, of course, to move our bees to where the heart's-ease flourishes, rather than to make the plant flourish where the bees are. Nobody would think of raising a crop of it.

TAILOR BEES AND HEART'S-EASE.

ARE SMARTWEED AND HEART'S-EASE IDENTICAL?

WM. D. KRATZ, Hatfield, Pa., sends some of the tailor bees—three females and one male. These are the *Megachile* bees. The females have golden-yellow hairs beneath their bodies, which aid them to collect pollen. The male has a very curiously developed front leg, which is not for collecting pollen, as Mr. K. thinks, but doubtless has some importance in mating. I give a figure of this curious leg in my last edition of "Bee-Keeper's Guide." These bees are called "tailor bees" from their habit of cutting regular pieces, circular or oval, from leaves of trees and plants.

HONEY FROM SMARTWEED.

S. L. Perkins, Farragut, Iowa, sends a plant which he calls heart's-ease. He says his hives were empty two weeks ago, but now are full—some with 48 sections nearly completed, and others three stories high for extracting. He expects, barring frosts, to have these flowers yet three weeks, and he expects 100 lbs. per colony of extracted honey from this plant. He says the weed grows on the alluvial soil of the Missouri River in Iowa, and is a nuisance until fall, when it is very valuable to the bee-keeper. He states that, for ten years, he has secured from each colony \$10.00 worth of this honey, each season,

except last year. The plant is one of the smartweeds, *Polygonum Pennsylvanicum*. I am surprised to find that smartweed has such a good record as a honey-plant. I have never noticed bees on it much here. We have this same species, but not very common. The smartweeds belong to the buckwheat family, and so we should not be very much surprised that it is a honey-plant. Dock-sorrel, and pie-plant also, are of the same natural order. Has any one else discovered in smartweed a good source of honey?

A. J. COOK.

Agricultural College, Mich.

Friend Cook, are you not in error in calling heart's-ease and smartweed one and the same thing? The matter was discussed in our journals considerably several years ago, and we decided that heart's-ease is a great big kind of smartweed. While smartweed is but very little noticed by bees in our locality, they literally swarm on the heart's-ease. It looks very much like smartweed, only the leaves and flowers are on an immense scale, and the seeds from it almost pass for small buckwheat. Large crops of honey have been reported from it, in the Western States. It usually comes up in cornfields, after the last hoeing. It seems to require a good mellow soil. Our friend J. A. Green, in the article just preceding this, tells us more about it, and the honey it produces.

RECEPTACLES FOR EXTRACTED HONEY.

PAPER INSTEAD OF TIN FOR MAKING SQUARE CANS.

MR. ROOT:—Having spent three years in the apiary and supply trade, I have given all matters pertaining to apiculture my undivided attention. Running for extracted honey, I have been very much interested in doing what I could to lessen the expense of raising and shipping our product.

While handling about 50 or 60,000 lbs., both in 58-lb. cans, in wooden jackets, and in barrels, I have admired the easy way in which the 58-lb. cans could be handled, still aware of the fact that they are very expensive—too much so for the specialist who sells his crop in lots of from 1000 to 20,000 lbs. Dreading the awkwardness and leakage of a keg or barrel, but esteeming its low price, I first thought of the new style of package which I describe below. It is to be made of paper, inclosed in a wooden jacket, much like the one used for tin cans. It will have to be made stronger, and must have no cracks large enough to allow any nail or other instrument to pierce a hole through the can. It is to hold 58 lbs., but 50 will probably be the desired amount for such a can to carry.

The following is the method in which the receptacle is to be manufactured: Lay a piece of stout manilla paper (large enough to form the bottom and all four sides) on the bench; on this place a form the size of the inside of can when completed; then wrap or form it to the form, gluing all places where it laps sufficiently to hold it in place, till the cover can be placed and strongly glued on. Now take out the form and place and glue on the cover, which is to be made of a piece of paper, flat, with a rim projecting down over the sides of the can. At

each corner a small corner piece of paper pressed into such a shape as to just fit on the corner will be glued on, thus avoiding the leakage which would necessarily take place without them. This cover is to have a 3-inch hole cut in the center, to pour the honey in, after which a 5-inch round piece of paper, which is glued on the outer edge, is to be placed on and rubbed a trifle with one finger, then nail on the cover, and the package is ready to ship.

The cost of the material, the paper and glue, will not exceed 5 cts.

I have made various experiments as to the lasting qualities of the glue, and know it will hold a lifetime. Should the honey candy, to remove it, simply shake the can out, cut off the wrapper, and put the honey in any desired place. The cases are cheap, and one can well afford to destroy them rather than to pay 25 or 30 cts. for tin ones. To draw the honey from the can, take a block 3 x 3 x $\frac{3}{4}$ in., with a one-inch hole in the center. Glue it on the paper cover, and cut the corresponding spot on the can out, and use a cork as a stopper.

Now, Mr. Root, please tell me what you think of my invention. If you do not understand all about the can, I will make you a model at my earliest convenience and ship by express; and then if you wish to make a few to try them, all right.

Dowagiac, Mich., July 19, 1888. WILL HEDDON.

On receipt of the article above, curiosity at once prompted us to inquire what relation the writer bore to Mr. James Heddon, of the same place. The former replied, "I am slightly acquainted with and related to James Heddon, he being my father." It will not be necessary, then, to introduce the junior Heddon further to our readers. If it is possible to make receptacles of paper it will greatly lessen the expense of packages for extracted honey in bulk, and put just so much more money into the hands of the producer. A Californian who visited us recently, Mr. C. N. Wilson, of Los Angeles, an extensive honey-producer, said it cost him about a cent a pound to get his honey ready for shipment. We mentioned to him that the junior Heddon was experimenting on paper receptacles. He said that, if the idea could be carried out into practical effect, it would be a great boon to California honey-producers. In a line with our own experiments, we would say that we made several paper packages as directed above, and cemented the joints with rubber cement. But we found that all the paper we have tested so far, would soon become water soaked, and would very shortly leak. We then made another package the same as before, with the exception that we poured hot melted wax into it when completed, after which we gave it a vigorous shaking. This formed a wax film inside—something as is done in waxing barrels. It was then put into a snug-fitting wooden jacket. This package held water for several days. It was subjected to severe treatment, dropping and rolling it about the floor. It stood all this until about the third or fourth day, when all at once, being oversanguine of its strength, as we gave it a tumble on the floor it sprang a leak. Our treatment was doubtless too severe, and we do not therefore propose giving it up yet. The junior Heddon has no doubt had better success. We sin-

cerely hope it will not be a failure, although we must confess that any thing so fragile as paper seems hardly firm enough, even when jacketed on the outside with wood, to hold honey. When our friend Will gets the idea perfected we hope he will send us a can of extracted honey in a paper package. We will promptly report the success or failure of it.

SOMETHING FURTHER FROM FRIEND REESE

CONCERNING THE WIRE CONE-CASE BEE-ESCAPE, ETC.

I HAVE given the wire-cone escapes another thorough and practical test this season, using again the plan described by Mr. H. R. Boardman, on page 200, which plan I had used side by side with my improved plan. I finally discarded it for the one I described on page 15. My experience was that Mr. B.'s plan caused more confusion and excitement with the bees, as they were forced to leave the hive and seek the proper entrance. I also discovered they went out heavily loaded with honey, and returned in due time, making persistent efforts to effect an entrance for more; while with my plan, with the cones leading the bees, and especially the young ones in their natural direction to the brood-chamber, every thing went on so smooth and quiet that you could not discover any thing unusual about the hive. The cases were also much sooner emptied of bees, and the honey could be left on the hive indefinitely, and be securely protected from robbers at all times. I now make this false bottom that fits the empty super, with four one-inch holes close together in the center, with one single cone to cover all, which simplifies the already simple and inexpensive arrangement. This matter is well worth the attention of all practical bee-keepers who are inclined to keep abreast of the times, and accomplish the greatest benefit with the minimum of time and labor. The plan is especially suited to the T super, and the user will discover many good points that I have not mentioned. A single tin cone or small tin funnel, to fit Mr. B.'s "hard-wood form," will work nicely, and is simple and cheap.

COVERING FOR SECTIONS.

Enameled or rubber cloth has proven to be the best cover for sections or frames among the many materials I have used, from the fact that it lies close and smooth, and the bees put very little propolis on it; and what little they do put on can be very readily wiped off with a few soft shavings, excelsior, or old rags, if the sheet is exposed to the hot sun a few minutes when the propolis becomes quite soft, and the cloth is left with a glazed or polished surface.

CORRUGATED IRON FOR HIVE-COVERS.

The subject of water-tight hive-covers had troubled me no little until I hit on the plan of using corrugated iron. It fills the bill nicely, being light, and costing from 12 to 15 cts. each. It may be ordered the exact size wanted, from the factory, at 4 cts. per square foot, painted; and with a limited amount of paint when needed, will outlast the owner. The smaller corrugations, $1\frac{1}{4}$ in., are most suitable, and the sheets may be tacked on old wood covers that are defective, and take the place of a shade-board.

THE YELLOW VS. THE BLACK RACE.

This has been a good season (not for honey) to test the two races of bees, black and yellow. My two colonies of blacks—being in the same apparent condition as the ten colonies of Italians in the same yard, secured no surplus, while the Italians gathered from 20 to 50 lbs. each. When the honey-flow was over, the Italians remained quietly clustered in and on the hive, while the blacks were nosing around everywhere, trying to rob; and when the jam-making process was going on, the kitchen was swarming with bees, and, to my surprise, every single one of them was black. We all know Italians will rob, but they seem much less inclined to do so.

THE POISON OF THE STING.

The poison of the bee swells me badly, and the only positive panacea I have found is to take the sharp point of my penknife and make a slight cut just where the bee-sting enters, and insert a small quantity of carbonate of soda (common cooking soda) in a few drops of water. I keep a small vial of the solution convenient, and the swelling is averted every time.

J. S. REESE.

Winchester, Ky., Sept. 18, 1888.

Friend R., the point you make in regard to letting your bees into the brood nest, is a good one. Dr. Miller's excellent arrangement, shown on page 681 of our last issue, is, I presume, open to the objection you make.—We decided, years ago, that enameled cloth was the best thing we had ever got hold of for covering frames, sections, or any thing of the sort.—My objection to your corrugated iron for hive-covers would be the weight, and I feel quite sure that thin roofing tin costs less per square foot than the iron, and the iron is certainly much heavier to handle. Either one must be kept painted, to avoid rust.—I believe the general testimony is like yours in regard to blacks and Italians, although circumstances may for a time, in rare cases, make a showing the other way.—In regard to the bee-sting remedy, if you are to cut into the flesh so you can get the alkali to reach the poison before it gets into the circulation, there might be some reason in the remedy. But I confess that I should prefer not to have my flesh dug into after that fashion, even if it were desirable to get the alkali down into the spot.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

BEE-KEEPERS AT THE WEST VIRGINIA EXPOSITION AND STATE FAIR?

EDITOR GLEANINGS:—It would, perhaps, be interesting to some to know that there are a few live bee-keepers to keep the ball rolling, by an exhibit at the above tri-state fair.

While we can not detail all, we will make special mention of the exhibit of our friend C. L. Sebright, of Blaine, Ohio.

Upon entering the hall we first notice the smiling faces of Mr. and Mrs. Sebright behind a Novice honey-extractor, entertaining a crowd of curious visitors, and telling them just how the machine would "sling honey." Then the hive of beautiful golden-edged Italians, just too sweet for any thing,

and "so tame," kept friend Sebright busy in "using his chin," answering questions, telling all he knew about bees. A pyramid of beeswax, capped by the "stars and stripes," was conspicuous. Several cases of snow-white honey-jars, and cans of extracted honey; piles of hives, and a full line of implements for the apiary, were displayed with taste, and carried the "red ribbon" over all competitors. Brother Sebright is blessed with a whole live woman for a companion, and last year carried off the premium for the "best baby," so you see it is no wonder that he is such a progressive bee-keeper. Altogether he is a genial good fellow, whom it is a pleasure to meet. Bee-keepers of Eastern Ohio and West Virginia owe friend Sebright a debt of gratitude for his efforts to improve apiculture.

D. H. T.

WILD CUCUMBER, AND THE HONEY IT FURNISHES.

As I have never seen wild cucumber mentioned as a honey-plant in GLEANINGS, I will send you a sample of unripe honey; also a piece of the vine. It is our best fall honey-plant along the Kaw River. We shall get some surplus from it this fall, besides putting our bees in fine shape for winter. If you don't know the name of the plant, send it to Prof. Cook, and reply through GLEANINGS.

J. K. WILLIAMSON.

Edwardsville, Kan., Sept. 8, 1888.

Friend W., we are very much obliged for the honey, and the information you give in regard to it. The plant is the star cucumber, or *Sicyos angulatur*. The botany says it is so rapid in its growth that, when a stick is presented to one of the feelers, or tendrils, it will wind around it with a motion that is visible to the naked eye. I think the plant grows spontaneously in our locality. I will explain to our readers, that the honey is pretty fair, having a very perceptible cucumber flavor. As you say it is unripe, it will perhaps improve a good deal on being ripened and sealed up in the hive.

CIRCULATION OF AIR NEEDED FOR EVAPORATING HONEY, FRUIT, OR VEGETABLES.

Your suggestion about the need of a circulation of air in evaporating water from honey, in reply to query 65, p. 576 is important. I have been anxious to devise a plan to have a current of air over the honey under the cover. One of my neighbors has been experimenting on a fruit-dryer. He considers a strong current of air immediately over the fruit the most important principle.

DECOY HIVES IN CALIFORNIA.

Mr. G. F. Merriam, of Escondido, San Diego Co., Cal., says in a letter to me that he left empty hives in an apiary from which he moved the bees, and during this season 39 stray swarms came and entered the hives. I thought I did well when I had two come to me one season.

San Buenaventura, Cal.

R. W. WILKIN.

Why, friend W., this is indeed wonderful, but I presume it is owing much to the great abundance of bees in your beautiful climate, especially to the number of stray swarms going about loose. By the way, friend W., I expect to make you a call in five or six weeks. I mention it here in order that the rest of my bee-friends in California may know that I propose looking in upon them.

PROF. COOK AND THE GOLDEN HIVE.

Dear Mr. Root:—Please say that I never used the Golden bee-hive, and never advised any one else to use it. I did one year get an exceedingly large amount of money from a single colony of bees; but I have always been sorry that I told of it. It was entirely exceptional; and to bruit it abroad is misleading and mischievous, so will my friends please never speak of it?

As to the currants which Mrs. Lawrence reports as turning from red to white, I can only suggest that, barring a chance for mistaken observation, it is one of those sports that nature is ever surprising us with. This is a very decided variation, and such a bush would be regarded as a prize by our horticulturists.

A. J. COOK.

Agricultural College, Mich.

AN ITEM WE SHOULD LIKE TO SEE COPIED.

The following first came to our notice in the *American Bee Journal*, and they copied it from the *Western Christian Advocate*. If the papers will take it up and give it such a run as they did the stories about bogus honey, some good may be accomplished. It ought not only to be published in every paper in the land; but if it were tacked up on the guide-posts, wherever two roads meet, it would be a blessing to the coming generation. I would, however, omit the opening paragraph.

What is the chief end of bees?—To get out patent hives.

What is the best patent hive?—The best hive is not patented.

But don't some of these patent hives fool the moth?—No; they fool the men who buy them.

What patent hive is the most useful?—The new one in the barn, with a hen's nest in.

But is there not more money in patent hives than in bees?—Yes; but that time is almost over.

But how are we to know a poor hive?—It has a great many doors, drawers, hinges, cracks, crevices, nooks, and corners which look like conveniences, but which the bees stick fast.

Who are the great bee-savants of this country?—The men who don't use patent hives.

Are bees profitable?—Not to those who buy patent hives.

It was only day before yesterday that a young man was walking over our grounds, looking at the strawberries, etc. He is the son of an old bee-keeper who sometimes writes for GLEANINGS. He has been considered a well-to-do young farmer, but he told me the story of how he lost his farm—lost his horses; in fact, lost every thing that a set of patent-right sharpers could get hold of. It did not go for a patent hive, but it went for a patent-right fence.

T SUPER ADAPTED TO DOOLITTLE'S PLAN.

For years I have watched closely the different methods of manipulating bees and hives, as given by different writers in GLEANINGS, and particularly Mr. G. M. Doolittle. Mr. D.'s accuracy of observation and thorough practicalness of methods I have repeatedly proved by going over the same ground myself. In fact, the first time I ever caught him "off his base" was in GLEANINGS of Aug. 15, page 634. He says: "In this way I accommodate the size of the colony with the needed room, neither giving too much nor too little, as must of necessity occur where the T super and others of a set capacity are used." Allow me to call Mr. D.'s attention to the

fact that the T super is only of a *set capacity* when full. I have a number of T supers in use, of different sizes, some holding when full from 30 to 40 sections, but they are not always full. I follow the same plan with them that Mr. D. does with his wide frames, using a follower for the purpose. This follower is simply a piece of board the size of the inside of the end of the super, with saw-cuts for the uprights of the T's. During this poor season several of them had only 3, 6, or 9 sections in them. As the majority of bee-keepers do not use chaff hives, and do use T supers or Heddon crates (some of which I use and on the same plan), I can not see that Mr. D.'s method is any improvement on the old plan.

WHY OUR SWARM-CATCHER IS MADE TO HOLD THE SWARM.

On page 654 you say, "The great trouble with most swarming-devices which we have seen is that they will not hold the bees after they have been captured." Now, right here will you tell me what you want to hold them for? I run my apiary, consisting at present of 75 colonies, entirely on the natural-swarming plan. Of course, I have considerable swarming, but I do not allow the bees to cluster on a limb. It is far easier and quicker to make them alight on a swarm-catcher than to let them alight on a limb and then get them on or into any swarming-device yet made. Just take an old soft felt hat, put it on the end of a pole, and, just as the bees are starting to alight, work the old hat in carefully; and when they are clustered they are all on the hat, ready to go where you want them.

Kintore, Ont., Aug. 31, 1888. J. W. WHEALY.

Yes, but our bees usually are not so accommodating as to alight where we want them to. The only way we can induce them to cluster upon any particular object is to attract them with a laying queen; but when the latter is in the air we are obliged to secure them wherever she and her attendants may see fit to cluster. After having taken the swarm with the catcher, we don't want them to forsake it, as they are apt to do, for the original point of clustering until we are ready to deposit them at their permanent location, and so our catcher is so constructed as to hold the majority of the bees until all are clustered.—Your point in regard to the T super is a good one.

UNITING.

I have a few swarms that came late, and I can not winter over. I wish to know the best way to double them up. I had a swarm come out the last of August. Not knowing which hive they came out of, I thought I would put them in a large Quinby hive. I started them in, sprinkling both swarms; but the bees that owned the Quinby hive fought the others and killed them all off.

C. LAWRENCE.

Ottumwa, Iowa, Sept. 8, 1888.

There is usually no trouble in uniting bees if you smoke them pretty freely when they show a disposition to fight and sting each other. It is a difficult matter sometimes to unite Cyprians and Holy-Land bees. These races will sometimes fight and kill each other in spite of smoke or any thing else. Most Italians can be united without any trouble, at any time. We would recommend you to read the subject of "Uniting," in the A B C of Bee Culture.

OUR QUESTION-BOX,

With Replies from our best Authorities on Bees.

All queries sent in for this department should be briefly stated, and free from any possible ambiguity. The question or questions should be written upon a separate slip of paper, and marked, "For Our Question-Box."

QUESTION NO. 79.—(a) *Granting that it is a benefit to the pursuit at large, does it pay the exhibitor financially, either in immediate returns or in ultimate returns from such advertising, to make honey exhibits at his county fair?* (b) *If it does not, usually, can it be made to do so?*

a. No. b. I doubt it.

GEO. GRIMM.

It would not pay me.

G. M. DOOLITTLE.

I think it does not usually. Occasionally an exhibition will make it pay.

H. R. BOARDMAN.

I don't think that it does, nor that it would pay to try to fix it so it would.

JAMES HEDDON.

a. It would not pay in our county, and I don't think it could be made to pay.

E. FRANCE.

a. Yes. b. A thorough-going bee-man can hardly afford to do without such publicity.

R. WILKIN.

a. I think it may pay him immediately if he sells honey at the fair. b. I think so.

C. C. MILLER.

Success depends principally on the disposition and ability of the individual in all such cases.

CHAS. F. MUTH.

a. It pays some men. It does not pay others. b. I don't think it can be made to pay them at all.

E. E. HASTY.

a. Yes, as it is one of the best advertising mediums. Place your merchandise conspicuously, and in a neat and attractive way.

PAUL L. VIALLO.

We see nothing in it unless the premiums are sufficient to pay expenses of exhibition. We have exhibited at three State fairs formerly, and found no profit outside of premiums.

DADANT & SON.

The right kind of a man could undoubtedly make such an exhibit pay under most circumstances. We ought to push and advertise our business as much as other kinds of business are pushed and advertised. Really it needs such help more than most of them do.

JAMES A. GREEN.

a. I have had no experience in exhibiting at county fairs; but the sales of honey, and advertising alone, have never paid me. I rely largely on the premiums, the genial acquaintances I make, and the "fun of the thing" for the profits. b. Some do make it pay.

DR. A. B. MASON.

Hardly, as at present managed. It can be made to do so by securing premiums that will make the industry appear respectable in lieu of such as would disgrace any business. The premium-list should be such as would encourage a first-class exhibit. This, in turn, would greatly benefit both the exhibitors and the industry as a whole.

A. J. COOK.

I feel very sorry indeed that my foot-note in the last issue, on the matter of fairs, had not been before the friends who answer questions, so they could have read it before giving their opinions as above. My opinion is, that a county fair should not only be looked at as we look at bee-conventions, but,

to carry it still further, we should think of them something in the same light as we consider the matter of going to church or prayer-meeting or Sunday-school. One seldom asks the question if it *pays* financially to attend these places; or, if you choose, does it pay to attend the preliminary, or caucus meetings pertaining to the welfare of your town, county, or State? Several of the answers are somewhat in a line with this—Dr. Mason, for instance, and J. A. Green and Prof. Cook.

QUESTION NO. 80. *Have you found that the distribution of circulars, fancy cards, etc., at county fairs, calling attention to the value of honey as food and medicine, have had a beneficial influence on your sales of honey during the following year? If you have not had experience, can you not call to mind any incidents where such means of advertising has benefited indirectly the one who made the distribution of the circulars?*

See answer to number 76.

DR. A. B. MASON.

I have had no experience in this.

GEO. GRIMM.

Have had no experience along this line.

G. M. DOOLITTLE.

My knowledge on this point is an utter blank.

C. C. MILLER.

I have never tried it. I can to some extent.

MRS. L. HARRISON.

I have never heard of any incidents in that regard.

PAUL L. VIALLO.

We have not tried it. It certainly would do some good.

DADANT & SON.

I have had no experience nor observation on this point.

A. J. COOK.

I do not think I can add any thing of importance to the general fund in this.

E. E. HASTY.

My observation and experience would say that such work is not profitable.

JAMES HEDDON.

I have not had much experience in this way of advertising. I have better returns from other methods.

H. R. BOARDMAN.

It is taken and accepted, that all advertisements benefit, more or less, the advertiser and his business. However, we have paid thousands of dollars for advertisements, and in very rare cases only have we been directly benefited by any one advertisement.

CHAS. F. MUTH.

Such advertising ought to pay, according to all rules of advertising, if judiciously carried on. Still, I believe the sale of even a small quantity of honey is worth more as an advertisement than many circulars. My experience in distributing circulars has not been encouraging.

JAMES A. GREEN.

We have never tried the distribution of circulars or cards at fairs or any other public gathering. We usually have a large quantity of honey to sell, and depend on selling to manufacturers and honey-dealers away from home. We keep honey in the stores in our own town, and sell at the house at home. Any further than that, we sell at wholesale by the barrel or thousand pounds.

E. FRANCE.

This question hinges a good deal on the point in regard to using printed matter for advertising, or some other means. I think it is oftentimes the case that printed matter is wasted, or used to excess, when it is not needed. I should say, that a pleasant face

and obliging manner at a county fair would do more good than printed circulars. There are cases, however, where a printed circular is almost a necessity—the matter of tile for underdraining, for instance. A tile machine in operation at a fair is interesting to almost everybody, and almost every farmer is interested in the prices of tile; but it would be folly for the proprietor to expect to give every passer-by the prices so he could remember them, unless he gave them the prices printed on a card, or some such way. It may not be necessary to have a printed circular to give the prices of comb and extracted honey, when it comes to having it put up in glass pails, tin pails, jelly-tumblers, etc. I think, however, a printed card is often a great convenience.

QUESTION NO. 81.—*Should local bee conventions be held on the grounds during fair time? Jones (who has had adverse experience in organizing bee-conventions independent of any other attractions) asserts that they should be held at a fair, because a larger attendance than would otherwise be obtained is secured. Brown disagrees. He argues that there are so many outside attractions, such as shows, poultry, cattle, horse-racing, and general sight-seeing, that the convention is continually interrupted by those coming in and going out. Further, that the members of said convention on the ground will not be present half the time, and consequently the attendance is a very variable quantity. Which of the gentlemen named is the nearer right?*

1. No; 2. Brown.

DR. A. B. MASON.

Brown, by all means.

PAUL L. VIALLOX.

I agree with Bro. Brown.

CHAS. F. MUTH.

I never attended a bee convention on the grounds during fair time.

GEO. GRIMM.

Decidedly, no. Brown is right; you can't run a bee-convention against a "hoss trot" at a county fair.

MRS. L. HARRISON.

Not unless they can be held evenings. Jones is correct for evening meetings, and Brown for day sessions.

A. J. COOK.

Yes, if you want to have a pleasant chat; No, if you want to hold a convention and learn something. Brown is right.

DADANT & SON.

My experience and observation have been similar to Brown's. I think fairs a poor place to hold bee-conventions.

H. R. BOARDMAN.

More real good can be done at a convention where there are no other attractions. The attendance may be smaller, but it is much more apt to be in earnest.

JAMES A. GREEN.

Brown; but there may be exceptions, as when half a dozen men can be got together from different parts of the county at a fair, who otherwise would never meet.

C. C. MILLER.

Brown is right, in my opinion. If a man is not interested enough in the convention to come to it because it is a bee-convention, he is of little use to it, coming when a fair draws him.

G. M. DOOLITTLE.

No. I wouldn't hold bee-conventions in a public place. What the producers want is to meet each other, not persons who may be induced to enter the business. There are more in it now than can make it profitable. Years ago, in this State, we found it objectionable to hold our conventions during fair time in the same city, for the reasons stated by Brown.

JAMES HEDDON.

I think Jones will secure the attendance of all the bee-men who would go to any other place. Give those variable-quantity chaps a seat near the door, and let them go when they want to. They are of no use to the convention any way. E. FRANCE.

If a few bee-keepers will meet specially for bee-keepers' interests, I think it of much more service than twice the number met at a fair with mixed interests. Yet if they can be got together at a fair, and not at other times, then have it at the fair.

R. WILKIN.

Both are right. Where the interest is sufficient to make people come, it is better to be free from distractions. Where the managers are determined to have a convention at all hazards, knowing that people would not turn out on purpose for it, they will do better to double up teams with a fair.

E. E. HASTY.

Both Jones and Brown are right, and only local conditions in each case can determine which is the nearer right in that particular instance. Conventions, to be most successful, require the undivided time, attention, and the best thoughts of its members, and it is difficult to obtain these when other attractions are present. Many times, however, a sufficient attendance can not be secured except in connection with fairs, etc., and in such cases it is best to hold conventions, even with all the drawbacks that Brown so truthfully describes, than not to hold any at all.

O. O. POPPLETON.

The best conventions, I believe, I ever attended, were in the winter time, when it was so cold that nobody wanted to run outdoors; and some of them were held in small towns, with only a moderate number in attendance. I can not remember one held on a fairground that I thought was very much of a success, for the reasons mentioned; yet they might, perhaps, be a success after all.

BABY FOOTSTEPS.

BY EUGENE SECOR.

Patter, patter, patter—not the rain on the roof

As it falls like a sweet lullaby on the ear,
But sweeter by far (and it hardly needs proof)
Is the pattering music of footsteps dear.

Trot, trot, trot, all the livelong day,

With tireless little feet that never seem to rest.
Always under foot, but never in the way,

Like a wee helpless bird ere it leaves the home nest.

Many are the steps which the happy little tot
Repeats o'er and o'er with never-ceasing zeal;
Many are the tumbles, very soon forgot,

For the mother's healing kiss restores the baby weal.

Upstairs and downstairs a hundred times a day,
Ever on the watch at some forbidden door,
Singing baby-songs in a baby's matchless way,

While the patter of the precious feet is heard upon the floor.

Happy little midget she, so full of Eden joys!

Artless as a lambkin playing on the green!
Pure as are the angels whom the blessed One employs

To watch and guard his children day and e'en.

Happy is the household where a baby runs alone.
Though she often bids defiance to rules in force before,

Her cheerful winning ways for chaos doth atone,
And life is made the brighter by the patter on the floor.

REPORTS ENCOURAGING.

A GOOD REPORT; A PHOTOGRAPHER WHO CLEAR-ED \$357 FROM HIS BEES.

I BEGAN in spring with 49 strong colonies; 46 cast swarms; 3 did not swarm. I increased to 68; now have 117. Amount of honey taken to date is 4000 lbs.—3500 extracted, 500 comb. I shall yet have perhaps 1000 lbs. of fall honey from goldenrod and mountain flowers. I send you a sample of my extracted honey. I think it linn and sourwood mixed. My expenses footed up—

Cash for lumber.....	\$15 00
Oil cloth.....	3 00
Brood-frames.....	12 00

Total.....	\$30 00
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3500 lbs. extracted, sold at 10c.....	\$350 00
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250 lbs. of comb, sold at 15c.....	37 50
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Total.....	\$387 50
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Expenses deducted.....	30 00
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Amount clear.....	\$357 50
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I do not count my labor above. I made my own hives. Three days in each week I gave to my photograph gallery in Winchester; the other 3 I gave to my bees, garden, and other little things around home. I have had no help except my wife. She helped me to extract, but I can't coax her into the apiary, as a single sting makes her very sick. I am well pleased with my summer's work among the bees. I hope next year to make a fine report, as all my bees are in most excellent condition. Foul brood and dysentery are unknown in my section. I am now restocking my apiary with non-swarming queens. I winter on summer stands. All they need is plenty of good honey and a water-tight cover.

R. B. WILLIAMS.

Winchester, Tenn., Sept. 8, 1888.

A WONDERFUL FLOW OF HONEY.

We are having the most wonderful fall flow I ever saw. Every thing is full. B. F. LITTLE.

Brush Creek, Iowa, Sept. 7, 1888.

100 LBS. PER COLONY IN 10 DAYS.

Bees have done well this month; 100 lbs. per colony in 10 days. Isn't that big? WM. MALONE.

Newbern, Ia., Sept. 18, 1888.

ENCOURAGING FROM LANGSTROTH.

Bees in Dayton have done well this season, and are still increasing their stores. Do come to Columbus. I want to see you very much.

Dayton, Ohio, Sept. 14, 1888. L. L. LANGSTROTH.

AN EXTRA GOOD SEASON.

We had an extra good season for clover honey here this year. We have had but one equal to it in the seven years I have been keeping bees. It lasts from the first of June to the tenth of July. My Carniolan bees show that they are honey-gatherers through this time.

JOSEPH KLOCK.

Urban, Pa., Sept. 16, 1888.

DOING WELL SINCE THE MIDDLE OF AUGUST.

This season with us for keeping bees was very unfavorable up to the middle of August. There was but little surplus in the combs; but since that time they have done well. I put a swarm in a hive the 21st of August; hive weight, 25 lbs.; swarm of bees with hive, 33 lbs.; weighed again the 6th of this month, it weighed 81 lbs.

C. AUTENRIETH.

Creston, Iowa, Sept. 10, 1888.

E. FRANCE & SON.

The bees are making a living from fall flowers. We have tried several kinds of honey-plants, and so far the melissa is ahead. It began to bloom the last of July, and has just finished blooming.

Plattville, Wis., Sept. 8, 1888. E. FRANCE & SON.

140 LBS. PER COLONY; BEES PAID THE BEST.

The honey season has closed with this result to us: The colonies from which we have extracted have averaged 140 lbs. to the colony; those from which we have taken comb honey, 60 lbs. to the colony. We have found the bee-business this year more profitable than any other branch on the farm, for the labor and capital invested. Since my report Aug. 4, our bees have worked a good deal, both for pollen and honey, on the Rocky Mountain bee-plant. With us, August was the best month during the season for collecting honey. Considerable has been gathered in September.

MRS. J. W. BACON.

Longmont, Col., Sept. 18, 1888.

REPORTS DISCOURAGING.

THE WORST SEASON KNOWN.

R EPORTS discouraging resound all along the line. The season opened up in quite a flattering way on apple-bloom, etc., and all of us bee-tamers wore a pleasant smile when we thought of the fine crop of honey that would be stored in our garner at the close of the season. Well, the season for honey came and passed as it always has and probably will; but what doth our garner bespeak? Well, its contents are easily itemized, for it contains naught but a few crates of hard-looking, dark bug-juice honey. At any rate, the sight would not make the honey-tooth water nor the pocket-book feel plump. Not one pound of light honey has been obtained by our bees this season. Basswood, though promising, and an exceedingly large flow, left us with a semi-melancholy look of one eye into our pocket-book, and the other into the dismal depths of the sugar-barrel. In all, this has been about the worst season it has been our lot to experience, so far as surplus is concerned. Our bees did swarm for a while at a lively rate; but the most of them were put back. Now, are we bee-charmers the only ones doing business who have these drawbacks? I answer, no; and do any of us know what another season may bring forth?

Dennison, Tusc. Co., O.

CHAS. L. HILL.

LITTLE HONEY, AND OF POOR QUALITY.

Bees have made but little honey in this part of the country, and that of poor quality. The highest I have taken is 32 lbs. from one colony, down to nothing. I have taken about 250 lbs. of comb honey and 75 lbs. of extracted honey from 30 colonies; 19, spring count. Some of it is the darkest honey I ever saw.

Avondale, O., Sept. 10, 1888.

W. T. SINDEN.

ABOUT HALF A CROP.

We have had a very poor honey season in this locality—only about half a crop of honey, caused by the long drouth during the honey season, which lasted until after basswood bloom; but we have had plenty of rain the last three weeks, and vegetation has become nice and green. We shall have about half a crop of honey from our bees.

W. G. RUSSELL.

Millbrook, Ont., Can., Aug. 22, 1888.

MYSELF AND MY NEIGHBORS.

In that day, saith the Lord of hosts, shall ye call every man his neighbor under the vine and under the fig-tree.—ZECH. 3: 10.

THERE are few if any who would like to live without neighbors. Circumstances sometimes make it desirable to live in a place where there are no neighbors nearer than a mile or two; but I believe that every man, woman, and child soon decides that such a place is not pleasant. I suppose that almost every one of us would prefer to have neighbors whom we would ordinarily call pretty mean, rather than to have no neighbors at all. I know we sometimes think, when vexed and sorely tried, that we would be content if there were no neighbors at all, within, say, a mile; but when we come to our sober senses, I think we would reverse our decision. When a child, I remember that we used to have some neighbors who were pretty overbearing, and hard to get along with; and when we came home and told mother how they had acted, she mildly recommended that we play at home, and not have any thing to do with the neighbors, at least for the present. It would not be very long, however, before the children of both families would be edging over toward the fence. Sometimes one of the younger ones, not so much used to the ways of the world, would venture, "Say! are you mad any longer?" and after this sally we would all get pleasant, and pretty soon would be over on their side of the fence, and they would be on our side. And so it went on until we grew up. Few things, in fact, add more to the enjoyment of life than being on pleasant terms with our neighbors.

Day before yesterday, while we were up in the swamp, we dug some potatoes that we have been showing around to the neighbors. Now, the potatoes were a surprise and a cause of rejoicing; but had I been away off in the woods alone, where nobody would have seen them but myself—why, the very thought of it makes me feel sad. As it was, I took one in each hand, and started for the nearest house. They were so big they made my arms ache, I tell you, before I got there. I put one under my arm while I opened the door with my free hand. I did not stop to rap. When I got the door opened I discovered they were all at supper. Worst of all, they had company—some city folks from Chicago. I decided, however, that I could not stop for city folks, and so I walked in with my potatoes. The people were all so greatly astonished that it made us acquainted (even with the city guests) in no time. Then I took my potatoes over to the factory, and I felt glad I had neighbors there too. May be you would like to know about those potatoes. Do you remember my telling you about starting some potatoes in the greenhouse, and covering them over on one Sunday night to keep the frost from killing them? Well, along in June I began to watch anxiously for the new potatoes; but they did not show any signs of ripening at all. They just grew bigger and

bigger, and *greener and greener*. It was the same in July and in August; yes, even during this latter part of September some of them have not stopped growing even yet. Two or three hills, however, showed the vines nearly dead, and it was with some excitement that I began to investigate under the black loamy muck. The ground where they grew had been heavily manured for celery, and this, perhaps, accounts for their immense size. They were hitched together in a scraggly kind of fashion; but the potatoes, prongs and all—and these prongs, mind you, were good sound potatoes—weighed fully $3\frac{1}{2}$ pounds each, and these $3\frac{1}{2}$ -pound potatoes were not all there were in the hill, either. There were enough for a good peck, taking all together. I bought the seed for the Early Ohio, and planted it for the Early Ohio; yes, and I sold some to some of the bee-friends for Early Ohio too. But they proved to be a great big long white excellent potato, nothing like the Early Ohio. I am afraid I shall not achieve a very great amount of success as a seedsman if I continue to make so many blunders as I have been telling of lately in these pages.

Well, it is pleasant to have neighbors to rejoice with you when you have great big potatoes, and lots of them; and it is pleasant to be on such familiar terms that you can go right into the house, without the ceremony of rapping; but, my friends, it is a terrible state of affairs when Satan manages to get a finger into a neighborhood, so that the neighbors are *not* on pleasant terms. I know it is hard to put up with every thing, and present a smiling face when you are greatly annoyed, vexed, and perhaps sometimes grievously wronged. Let me make an extract from a letter I received just when I was thinking about this matter of writing *Our Neighbors* for Oct. 1. We omit names and residence, because we do not want to make matters any worse by giving publicity.

COMPELLED TO QUIT.

Mr. Root:—I have no further use for bee-matter except GLEANINGS, because of the behavior of an opponent. The person in question is a man who pretends to be a great lover of the gospel, yet after prayer he has been known to use words not suitable for youths to hear. He keeps several colonies of black bees (sometimes 40 colonies) which, you know, are an injury to a queen-rearer. During the spring of 1887 I visited this person (whose apiary is less than a mile from me), and agreed verbally to Italianize his black bees, free, providing he would accept the queens. He said he would, so last spring I furnished myself with a queen-rearing apparatus, etc., which cost me nearly fifty dollars. Well, I supposed I was in a first-class condition to raise queens to sell. I contracted with several parties throughout Pennsylvania to furnish them with queens at reasonable prices.

During the latter part of May, 1888, I came to the person in question, with an Italian queen, showed her to him, and offered to introduce her as per contract, when he said, "No, I will not have my bees touched! I will continue rearing blacks." He admitted that the Italian bees were the best; that they would work on red clover with success, which blacks do not. I replied, "I made you this offer

last year (which you verbally agreed to accept), for the purpose of establishing a queen-rearing apiary, which would prove available both to you and me." He again refused to do as he agreed.

My next offer was to present him some movable-frame hives (some of his being box hives), which he refused to accept. I also offered to transfer them free.

My next and last offer was to furnish him (without charge) \$15.00 worth of Alley's drone and queen traps, to catch his drones. He refused to accept the latter, in a very harsh and unkind tone. Do you, Mr. Root, think a man can be a true lover of the gospel, and at the same time be guilty of such an act—to cause a young man to be compelled to quit a profitable business, and lose a good trade, by not living up to his agreement?

I made several attempts to rear queens, but with no success—every one of my queens proving impurely mated. I also made contracts with the rest of my neighbors, agreeing to furnish them with Italian queens. They all agreed to accept them, except the person in question. In regard to GLEANINGS, I must say I can not do without it. Send it on. Though I am compelled to quit the business, I hope I may have the pleasure of helping to promote the interest of such a religious and apicultural work.

For convenience we will name the writer of the above letter A, and his neighbor Z. Friend A, I sincerely hope you will retain the good opinion of GLEANINGS which you express in your concluding sentence, even though you may not agree with the advice your old friend A. I. Root shall think proper to give you. I have had some trials almost exactly like your own. In my case, however, a neighbor purchased some colonies of black bees that were full of drones, and moved them within a few rods of our queen-rearing apiary. I fear I did not do just as a Christian ought to do, clear through the whole matter, for I am human, yes, *exceedingly* human. When we get into such a predicament, let us remember the Scripture text which says that "he that ruleth his own spirit is greater than he that taketh a city." I think my judgment may be a little better now, in the case you present, for I am not prejudiced either for or against either of the parties. I hope and pray, dear friend A, that you may have faith enough in me to believe me when I assure you that your friend is to be pitied more, perhaps, than blamed. Satan has got between you, and you are both, perhaps, more or less biased. When neighbors get into troubles like these, they lose their ordinary good judgment and good sense. Yes, we all of us lose our good judgment and good sense when we get into a quarrel. The first thing for you to do, dear friend, is to say, "Get thee behind me, Satan." Do not censure your neighbor too severely. It is the most natural thing in the world to complain of him, and to make out a pretty hard case against him. Resist with all your might this tendency. Keep saying, over and over again, "Love ye your enemies; do good to those that hate you, and pray for them that despitefully use you." You say he *pretends* to be a great lover of the gospel. Now, dear

friend, do not be in a hurry to use the word "pretend." I think he *is* a lover of the gospel. He may be unwise regarding the language he uses after attending prayers; but do we not all at times find ourselves guilty of the same to a greater or lesser extent? From the fact that he once promised you to have the bees Italianized, I think he is a good sort of man, and means to do right. Something has prejudiced him and provoked him, I fell quite sure, from your letter. A great many such cases have been brought to my notice; and a great many times I have assured the one who complained, that his neighbor would do what was right if approached in the right way. I have sometimes seen people act very stubbornly; and yet when I came to them in a friendly, neighborly way, with a remark something like this, "Friend M, you surely mean to do what is fair and right in regard to this matter between you and your neighbor, do you not?" what kind of an answer do you suppose I got? Why, I have hardly ever found a case where the reply has not been something like this:

"Why, Mr. Root, to be *sure* I will do what is right;" and the result has shown that, when the other party was willing to abide by my decision, he kept his promise. I think, my friend, we shall find it so in this case. As you state it, it seems pretty hard when he refused your offer of some movable-frame hives; but please remember, friend A., that few of us like to receive property without any equivalent. I do not believe it is best to offer Italian queens to somebody who has black bees, without pay. Suppose you offer them at a very low price, say what it actually costs to raise them; the same with the drone-traps which you offer him. Such an offer as yours would be apt to make many people stubborn and contrary. I do think your neighbor *can be* a lover of the gospel, even after what has happened. But I am afraid that Satan has got between you, and warped the better judgment of both of you. It is surely your neighbor's privilege to keep black bees, and have nothing to do with the Italians, if he chooses to do so, and I am sure you exaggerate the degree of wrong you have sustained, in several ways. First, it is not entirely out of the question for you to raise pure queens, even if your neighbor persists in keeping blacks. It has been tried a good many times. Again, it is by no means certain that you could do a profitable business, providing all around you were Italians. A great many queen-rearers have not made it pay, even after they had Italianized the whole neighborhood. It requires a good many years of practice and experience to compete with the low prices at which queens are now offered. Finally, from the fact you mention, that your neighbor is a Christian man, I take it for granted that *you* are a Christian man also. If not, dear friend A, is it not your first and most important duty to take up your cross and follow Him who said, "*Blessed* are ye when men shall persecute you and revile you," etc.? With a real Christ-like spirit in your heart, I am sure you can go to your neighbor and find him friendly and

fair. Suppose you approach him in this way:

"Neighbor Z, since our conversation the other day, I am forced to think that there is some reason I do not know of for the course you have decided on in regard to keeping black bees. Now, may be I was wrong; if so, please forgive me. I know it is your privilege to keep black bees if you choose, and I will try to feel pleasant and friendly toward you, even should you persist in doing this. If you do not object, however, I shall be glad to have you tell me the exact reasons why you think best to decline assisting me in this matter that I feel so anxious about; namely, in repressing black drones as much as possible in my neighborhood. We both love the common Master, who has said, 'Thou shalt love thy neighbor as thyself;' and while this is true, it is strange if we can not arrange a little matter like this pleasantly, and with neighborly feelings." Now as I bid you adieu, my two friends, may God's blessing and great love rest over you; and, in the language used by Jude, "the servant of Jesus Christ," let me say, "Unto him that is able to keep you from falling, and to present you faultless before the presence of his glory with exceeding joy, to the only wise God our Savior, be glory and majesty, dominion and power, both now and ever. Amen."

RECENT DEVELOPMENTS

IN BEE CULTURE.

CONDUCTED BY ERNEST R. ROOT.

THAT EDITORIAL "WE."

YOU see by the heading above, that I have started a new department, or, rather, reinstated an old one, to be inserted occasionally when material calls for it. There are several reasons why I do so. In the first place, I dislike to hide personality under the editorial "we." When I read an article I like to know who wrote it, and who is responsible for the statements. Several of the recent innovations I have written up in regular style, using the plural pronoun instead of the singular; but I always felt as if I were hedged in by that little word of two letters. While I shall not now discard entirely the editorial "we" in reply to general correspondence, in this department (and also in the department of Our Own Apiary) I want to arrogate to myself the privilege of "using I as often as I please," as Dr. Miller says, for I believe that less of "We, Us & Co.," and more *personality*, is what we want in articles written in regard to our rapidly growing pursuit. Another reason why I felt constrained to start this department is because the recent improvements are not always appropriate to be considered under the head of "Our Own Apiary," or under general heads elsewhere. Still a third reason is, that GLEANINGS prides herself because of the personality of her writers; and a fourth

reason is, that the times call for it. So there!

I may not always pick out that which is recent and that which is new or worthy of further development, but I shall spare no pains in watching both foreign and American bee-journals for material for this department. With this preface I am now going to talk again about something in the line of extractors which eject honey from both sides of the comb, without reversing either the motion or the combs.

THAT NEW EXTRACTOR, AGAIN.

Since my comment on the article on page 683, in regard to a recent German extractor, I have had some little correspondence with Dr. C. C. Miller, who has been thinking of this matter not a little. He is quite sanguine as to the success of the new method of extracting from combs. In a private letter dated Sept. 4, he says:

Dear Ernest:—I want to say a word to encourage you in thoroughly testing the extractor shown on page 683. The principle is all right, I believe.

In another private letter received, the doctor drew several diagrams, and added a great many suggestions, some of which I will incorporate in this article. His letter was submitted to Mr. Warner, and the latter finally made a working drawing embodying Miller's drawings in one. The accompany-

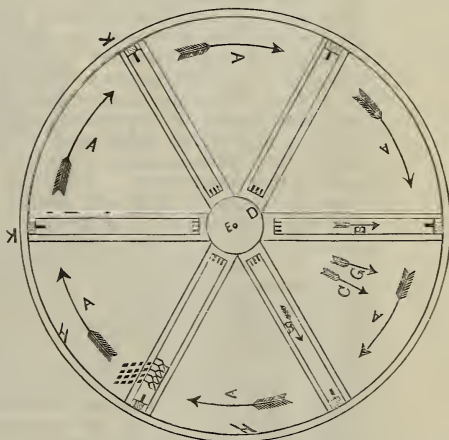


DIAGRAM OF AN EXTRACTOR WHICH DOES NOT REQUIRE THE REVERSAL OF COMBS OR MOTION.

ing is the diagram, and is reduced exactly ten times. You will see that, instead of putting the combs in horizontally, as was mentioned in the article translated from the German bee-journal, page 683, they are to be placed in vertically, the bottom-bar of each frame parallel with the spindle. The diagram shows a cross-sectional view, looking down into the extractor. B B shows the individual end-bars of the frames. The radiating lines parallel to the end-bars on either side represent comb-pockets. The inside circle H, H, represents the rim which supports and holds the comb-pockets; the outside circle, K, K, the can itself. The bottom-bar of each frame is just an

inch and a half from the center of the spindle. It may be desirable to have this end-bar further removed from the center of motion; but experiment alone can determine this. Now, every thing in the extractor is supposed to revolve, except the outside circle, i. e., the can. Let us suppose that the reel is revolved in the direction of the arrows A, A, A, etc. The centrifugal force is immediately exerted toward the top-bar of each of the frames. This force causes the honey to press toward the sides of the cells which are nearest the surrounding can. This will cause the honey to be forced to the mouth of each cell, to be spilled outward, and to be sent off at an angle, or to jump from cell to cell until it passes off beyond the top-bar. There are two forces operating with and against the centrifugal force. The first is the force of inertia, and the other is that of gravity. On one side of the comb, inertia operates in conjunction with the centrifugal force; i. e., the cells flee away from the honey, leaving the latter to spill off, say in the direction of the arrows G and C. On the reverse side of the comb the cells traveling faster will have a tendency to retain the honey. But in stopping and starting, this force is equalized, and hence made practically inoperative, as affecting the result of the centrifugal force.

To test the matter practically, the foreman made a diagram as shown above, and the tinnners very soon had an extractor constructed on this principle. I could hardly wait until the combs were brought in from the apiary. In order to give the extractor a hard test, I specially requested our apiarist to select combs with thick and well-ripened honey, and he was most successful in this part of the programme. Although the extractor is made to hold six combs, we (the foreman, the tinnners, and myself) could not wait to have six uncapped and put in the can. As the honey was so thick, the uncapping was a slow operation. No sooner had the two combs been placed in the extractor than the machine was set to whirling rapidly. Did the honey fly out? Oh, yes! It spotted the sides of the can, but, contrary to my *highest* expectations, it did not throw the honey out *quite* as clean as I desired to see it, although both sides of the comb were pretty well emptied simultaneously, without any reversing of motion. On removing the combs I discovered that practice very nearly confirmed theory; the direction which the honey took showed either that the centrifugal force was so much greater than that of inertia that the latter had but very little effect on the result, or, what is more probable, that it was entirely compensated by the retarding of motion. In fact, the honey was emptied about as well from one side as from the other, irrespective of the line of motion. After revolving the combs to as high a speed as I dared to in the hastily constructed reel, I then placed them in an ordinary extractor. The combs were emptied a little cleaner. I say a *little*, for it was only a small trifle. You will please bear in mind, that these combs had been in the surplus apartment of two or three very strong colonies ever since the honey had been gathered,

which was in the latter part of June. I feel quite confident that, if the combs of honey had been just allowed to seal over, every drop of the honey would have been thrown out. But there are some, like the Dadants, who allow their honey to become very thick before extracting. Perhaps further experimenting will make it possible to extract this honey also.

ITS ADVANTAGES, IF A SUCCESS.

Now, then, I will try to sum up some of the advantages that might be made in favor of this extractor. First, the most important is, honey can be extracted from both sides simultaneously, without reversal of motion. Second, a greater number of combs, for the same expense on a machine, can be emptied of their contents in less time than by the old plan. Third, an extractor on this principle, to hold 4, 6, 8, or 10 frames, can be made for considerably less money than similar extractors now on the market for extracting the corresponding number of combs. Fourth, as so many combs can be extracted at once, the apiarist can afford more time to let the combs drain of the honey which may cling to the edges of the cells.

Now, please understand that the foregoing advantages are made only on the assumption that the principle shall prove to be a success. In my mind it has not quite done it as yet, although so near it that I feel encouraged to test the matter a little further.

Let us now consider some of the defects that seem to be developed so far. It will require a larger and heavier extractor, consequently it will cost a little more. Secondly, it will demand a higher rate of motion, and, consequently, more power. Third, it may not do the work as clean as the old style.

HOW TO TEST THE MATTER FOR YOURSELVES.

I doubt not that some of our subscribers would like to test the matter a little for themselves, without going to any great expense. You can do it after a fashion in this way: Take a cup of water and set it down on the bottom of the revolving reel in an ordinary extractor. Give the extractor a few turns, and you will see how quickly the water is thrown out. After having done this, perform the same experiment, only using a bottle of water, uncorked, and you will find that the water will shoot out of the neck of the bottle until the latter is half emptied, the reason of which is apparent.

IS THIS IDEA NEW?

I would hardly dare to say that this idea is new, for it seems that, as long ago as 1874, Mr. Cowan used and put into actual practice a similar extractor; but because it broke down the combs, he abandoned it. The principle seems to have slumbered until our German friend, Mr. Buhne-Lauben, brought it forth to the public. Your humble servant, catching on to the idea, had the wood-cut copied by photo-engraving, and the same inserted in GLEANINGS. Dr. Miller, catching on a little further than I had, suggested putting the combs in as shown in the foregoing diagram, so the principle is not necessarily new, but an old one resurrected. It is

possible that it may again slumber, and slumber never to be resurrected again; but before it does I should like to satisfy myself whether the idea is practicable or impracticable. Now, there may be some of our readers who, after reading this, may say, "I worked out this same idea years ago and discarded it." If there be such a one or ones among our subscribers, will they please tell us all they know about it? If there is a good thing in our reach, we do not want to throw it away until we know it is good for nothing. It is the province of a bee-journal to develop and test these ideas.

Since the foregoing was written, a private letter came to hand from Dr. Miller. From it I extract the following, as it contains the account of a practical experiment, and confirms the theoretical workings of the new extractor. I hope others will try the doctor's experiment, and report on it. The extract is as follows:

My Dear Ernest:—I put on my overalls this morning, and tied a frame in the extractor with three strings, the bottom-bar tied to the spindle, the frame perpendicular. The morning is cool, the frame has been in the house for days, and was perhaps one-third full of honey, which I suppose was pretty thick, as it was put in the comb by bees that were cleaning up combs that had been extracted. Yes, it's quite thick, for I've just gone and stuck my finger in some that stands on the perpendicular surface of tin where it was thrown about an hour ago. I gave by actual count the number of turns usually made in extracting one side, and tried to give the usual rate of speed. With no little interest I took out the frame to examine. The first thing was a feeling of surprise at the execution done—delight as well. Not only was the part near the top-bar cleaned out as well as in ordinary extracting, but for some distance toward the bottom-bar, and some was extracted to within—on close examination I can distinguish a distinct line where the cells between that and the bottom-bar have the honey left in them undisturbed. This line is just 3 inches from the spindle, or about $3\frac{1}{2}$ from the center of motion. Just so far as a single experiment proves any thing, it makes me think that the point I made in theory is still stronger in practice; that is, that a tumbler or a cell revolving in the new position will be more readily emptied than in the old position in an ordinary extractor; and I think more than ever, that there was some mistake about your needing a higher rate of speed to extract the cells at the same distance from the spindle.

AN INGENIOUS METHOD FOR WEIGHING BEE-LOADS, ETC.

SOME INTERESTING RESULTS AS TO THE WEIGHT OF VARIOUS SEEDS, AND THE NUMBER TO THE POUND.

SEVERAL years ago I noticed a description in GLEANINGS of a scale for weighing bee-loads, by E. E. Hasty. I have made one on a different plan that I think is pretty good, so I thought I would write to GLEANINGS about it.

It is a floating scale, and consists of a cork with an upright straw in the top, and a weight at the bottom and a platform at the top of the straw. To make it, get a cork about two inches long and

from one-half to one inch in diameter. Fit a flat piece of lead to the bottom of the cork, just large enough to sink it, and fasten it on with a wire nail. Fit a straight, even-sized straw about eight inches long into the top of the cork, using a very small straw for small weights and a larger one for larger weights. Now dip the cork, lead, and the base of the straw in melted beeswax, to prevent water from soaking into any opening. With a rule and pen and ink, mark inch and eighth-inch divisions upon one side of the straw. The inch marks may be made longer than the others, or they may be made with red ink to be more easily distinguished. Having done this, varnish the straw to prevent the ink from washing off. Get a piece of thick paper, about an inch square, for a platform, and stick a wire nail or a pin through the center, to rest in the top of the straw. Set the scale into a two-quart glass fruit-jar, full of water; and if it sinks, pare off enough of the lead so the top of the cork will float about half an inch below the surface of the water. If you get too much pared off the first time, stick a small wire nail into the cork and try again. When you have got the scale to float properly, it is ready for use.



A SCALE FOR WEIGHING BEES, ETC.

Now for the weights. A piece of GLEANINGS cover one inch square weighs one grain, and a piece four by six inches weighs one pennyweight. Lay a grain or a pennyweight on the platform, and see how far it sinks. If a pennyweight sinks six inches, each fourth of an inch would be one grain; and an object that would cause the scale to sink one and one-half inches would weigh six grains, or one-fourth pennyweight. If a grain causes it to sink five inches, each eighth of an inch would be one-fortieth of a grain. An eighth on my smaller scale is equal to one-thirty-seventh of a grain. I have weighed quite a number of things, and will give some of the results. Alsike clover-seed required 320 seeds to weigh one grain. At that rate a bushel would contain 134 millions of seeds; and to sow one acre so that there would be a seed to every square inch would require two and three-fourths pounds. I think the sample I weighed was not as well-filled seed as the average, and would probably reduce the average number per bushel to 100 million. A grain of white clover contains 250 seeds, and timothy contains 225 seeds to the grain. Our Grand Rapids lettuce-seed has just matured, and I find that a grain contains 55 seeds. A pound with careful management ought, then, to make about 385 thousand plants. I have also weighed some melon-seeds. Muskmelon-seeds average three-fifths of a grain, and an ounce would contain 730 seeds. Watermelon-seeds weigh $1\frac{1}{5}$ grains, or 225 to the ounce.

An advantage this scale has over Mr. Hasty's balance scale is, that this is much more sensitive to a small weight, and the weight is found in less time.

DARWIN M. ANDREWS.

Farina, Ill., Aug. 20, 1888.

Why, friend A., you have not only got a very sensitive scale, but you have succeeded in making a splendid hydrometer at an al-

most insignificant cost. I am quite sure your experiment would show the difference between rain water and hard well water. It would also test the quantity of vinegar in maple sap, to say nothing of the specific gravity of different kinds of honey. If we could only have a standard scale of density of honey, so that our advertisers could by figures indicate the specific gravity, it would be worth a good deal. It is on the same principle as testing the strength of vinegar, brine, etc., by putting in an egg; but as all eggs are not of one specific gravity, there is very little accuracy by the egg method. The figures you give us in the al-sike-clover experiment illustrate how much of the seed is wasted because of our imperfect method in getting it evenly distributed. One plant to every square inch. I am sure, would be altogether too close. I should say that each plant should be at least two inches from its neighbor, in every direction. What is the opinion of our clover-men in regard to this matter?

SMALL GREENHOUSES FOR STARTING VEGETABLE-PLANTS, ETC.

HOW CHEAP CAN ONE BE GOTTEN UP, SO AS TO BE AN AID TO MARKET-GARDENING?

FRIEND ROOT:—Since bee keeping has been with us a complete failure for two successive seasons, it becomes necessary for bee-keepers to look for something else. Market-gardening, as recommended by you, costs little to start with, brings immediate returns, and can be dropped without much loss at any time. But a gardener without a greenhouse is like a lame horse in the ring—always behind—and therefore never wins a prize. In your talk, "What to Do," etc., you give a brief description of your greenhouse, but you say it cost from \$150 to \$200. Very few bee-keepers, especially after two bad seasons, are able to invest that much in a greenhouse, and I am one of the number; but in Chapter XLVI., page 207, you come to speak of a greenhouse 12 x 15 feet, which could be built for \$5.00. This suited my pocket-book exactly. I could build a shanty against the south end of my shop, put a glass roof on, and have a greenhouse according to how far I extend the shanty. With paper and pencil in hand I began to figure the cost at once; but, lo! here comes the rub. I have, of course, never had reason to doubt the word of A. I. Root, but I am much inclined to think he has made a mistake. I would, of course, have my house double-walled, packed in with sawdust. That will make it frost-proof, and save fuel; but 700 to 800 feet of common lumber at \$10.00 per M. would go a good ways. But how about the glass roof? The sash *alone*, if I should have them made to order here in the factory, would cost me nearer \$10.00 than \$5.00, to say nothing about the glass; so, according to my figures, before I got a greenhouse ready for business, as described above, it will cost \$25.00 to \$30.00, even if I do all work myself and count nothing. Now, friend, you can do me, and very likely a good many others, a favor by describing how such a small greenhouse, as you speak of in above-named chapter can be built at the lowest possible figures, and where the necessary material can be had. If it can be had of

A. I. himself, it may be all the better, for we know then just exactly what we are to get.

JULIUS JOHANNSEN.

Port Clinton, Ohio, Aug. 10, 1888.

Friend J., I think you are a little hasty in deciding that your friend A. I. Root is mistaken. If you will turn to the chapter you mention, you will find that, in the fore part, I describe a house for raising celery, perhaps 12x15 feet, and at the close of the same chapter I mention the little greenhouse I saw that day, that did not cost over \$5.00. Now, if you do not wish to invest over five or ten dollars in a greenhouse, I will tell you how to make it. It should by all means be a lean-to, and should be on the south side of some good substantial building. One with a cellar under it is preferred. A wing on the west side, but not so wide as to cut off too much of the sun in the afternoon, would also be an advantage. If you have not got the wing, put up some old boards; pile up some boxes or barrels, or take your spade and throw up an embankment of dirt and sods. It is very bad policy to have the door of a small greenhouse open directly into the open air. A door is also expensive. If you can remove a cellar window, and cut it down so as to be deep enough to walk through, and fit some kind of a door to it yourself, it will give you the best sort of an entrance; and during very severe weather you can open the door and make your little greenhouse a part of the cellar. If there is danger of your cellar freezing by so doing, cover your sash with mats, carpets, or even old boards, while the weather is intense. Make the east and west walls of some cheap old boards which you can pick up; then make them warm by banking coarse stable manure in the corners thus formed by these cheap walls, and the main building. Almost all I have mentioned can be done with little if any cash outlay. You will probably have to take some money to buy the sash.

In Chapter IV. of the book "What to Do," etc., I mention a cheap greenhouse which the owner made of some second-hand 4 x 6 window-sash, and which he bought for one dollar per sash, glass and all; and such second-hand glass can be bought in almost every neighborhood, if you hunt them up. If you can not find second-hand sash, make some rafters similar to those figured on page 176 of the book above mentioned, and put in the glass yourself. Use second-hand glass if you can find it; if you can not, purchase new; and as glass is always worth something after the greenhouse is torn away, it can never in any case be cash entirely lost. You can find an old stove in almost any neighborhood, as suggested in my book. Several such greenhouses have been built right over the usual cellarway. I would not advise this, however, as your greenhouse must be torn down whenever you want to get things out and in through the outside doorway.

SPECIAL NOTICES.

ONION-SETS—PRICE REDUCED.

Any time during this month of October is the time to plant these (see directions, page 695), and we have

been enabled to reduce the price as follows: 1 lb., by mail, postpaid, 20 c.; 1 peck, by freight or express, \$1.00; 1 bushel, \$3.00.

STRAWBERRY-PLANTS.

We have never before had such nice weather for growing strawberry-plants that I know of, and we have been doing quite a lively business in sending them by mail during the whole month of September. With the reduced rates of postage, 500 strong plants can be sent by mail so as to arrive in excellent order for only 50 cts. Beautiful plants of our three favorite varieties, Sharpless, Jersey Queen, and Jessie, at 10 cts. for 10; 75 cts. per 100, or \$5.00 per 1000. By mail, add 3 cts. postage on 10, or 15 cts. postage on 100.

"GRAND RAPIDS" LETTUCE.

At present we have some of the finest lettuce for market I ever saw grown anywhere, either under glass or out of doors. It is the Grand Rapids, and, of course, does not form solid heads, but the stalks average $\frac{1}{2}$ lb. each. They are so handsome that a glimpse of even the bed is enough to bring forth exclamations of surprise. I wanted to put a bed in our front lawn, but my wife objects. She admits it would be handsomer than coleus, or almost anything else, but she thinks everybody would laugh at a lettuce-bed in the front yard. Now is the time to sow the seed to get a crop for the holidays. Price 5 cts. per packet; $\frac{1}{2}$ oz., 10 cts.; ounce, 35 cts.; $\frac{1}{4}$ lb., \$1.25; 1 lb., \$4.50. Postpaid by mail at above prices, except pounds and quarter-pounds. For these, add 3 cts. for $\frac{1}{4}$ lb., or 9 cts. for a whole pound, for postage.

GLEANINGS IN BEE CULTURE.

Published Semi-Monthly.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, OHIO.

TERMS: \$1.00 PER YEAR, POSTPAID.

For Clubbing Rates, See First Page of Reading Matter.

MEDINA, OCT. 1, 1888.

These are murmurers, complainers, walking after their own lusts.—JUDE 16.

OUR subscribers now number 8415.

LOCATING AN APIARY NEAR CUCUMBER FARMS.

ON page 762 we have finally a report from an apiary in the vicinity of cucumber farms. As I expected, they gave quite a good yield of honey, and the honey is of good quality—looks like basswood. Now, this is a very important matter, and I would advise our readers to look out for localities where cucumbers are raised by the acre. My impression is, that about five colonies of bees could be profitably located, say within one mile of every acre of ground devoted to cucumber-raising. In the above case, 40 or 50 stands of bees filled their brood-chambers, and produced about 1000 lbs. of comb honey from the cucumber bloom. We shall be glad to have friend Reeves tell us about how many acres of cucumbers there were, say within one mile of the 40 or 50 stands of bees.

THE BEE-KEEPERS' GUIDE.

We have lately received a shipment of 100 copies of the last edition (fifteenth thousand) of the Bee-Keepers' Guide, by Prof. A. J. Cook. Comparing this with the former edition, we observe that it has been very largely re-written, and the new matter has been so nicely woven in that it is impossible to discover traces of patch-marks, so complete and

whole is the work. The latest edition contains 461 pages—over 100 pages more than the preceding one, the largest additions being made in the scientific portions. The plates have been entirely recast, and many new engravings have been added. It is printed on better paper, and its typographical appearance is creditable. Whatever may be said of other authors, we feel sure that our Prof. Cook has been very careful to give due credit whenever he has drawn from outside sources. In consequence of the large amount of labor which Prof. Cook has expended on this edition, and the addition of new matter, he thought he could hardly afford to sell it any more at the old price of \$1.25 by mail. The price of the new volume is now changed to \$1.50. If the old edition was worth \$1.25, this certainly is worth \$1.50. Copies will be mailed from this office at the price named, or 15 cts. less when sent by freight or express with other goods.

SLANDEROUS REPORTS IN REGARD TO THE ADULTERATION OF HONEY.

OUR good friend H. L. Hubbard, of Walpole, N. H., in trying to call to order the *Mirror* and *Farmer*, of Manchester, N. H., for their misleading statements, submitted to them our thousand-dollar offer. And now the *Mirror* and *Farmer* accuses me of offering a premium on deception—that is, I make it a greater object than it has been heretofore, for somebody to counterfeit comb honey. I would remind them and others that I have never offered a thousand dollars for a small piece of manufactured comb honey. I do, however, offer a thousand dollars for a proof of the statement so often made by newspapers and individuals, that comb honey is manufactured by machinery. I think it would look much better and be more profitable for the editors to own up frankly that they have made a big blunder, instead of trying to evade the necessity of an apology. They also suggest that some bee-keeper could feed his bees glucose, and thus secure the thousand dollars. They are mistaken in this in two ways. Such a course would not secure artificial comb honey; neither would it secure even a bogus article that could be sold at the price of the genuine. It has not been done, and can not be done.

NO PROGRAMME FOR THE NEXT NATIONAL BEE-KEEPERS' CONVENTION AT COLUMBUS.

FEELING a little concerned because of the non-appearance of the programme for our next national convention, we wrote to the secretary, W. Z. Hutchinson, and he replies as follows:

FRIEND ROOT:—Yours inquiring about the programme of the N. A. B. K. S. is here. I fear you will have to get along without a programme, and possibly your secretary too. Three weeks ago I was taken with inflammatory rheumatism, also some fever, a sort of rheumatic fever. Notwithstanding this I wrote, or had Mrs. H. write, to several, and tried to get up a programme. Some have not replied; others begged to be excused. Everybody seemed to want a convention, but few were willing to take hold and help; they were "going to learn instead of to teach others," etc. The apparent apathy of others, and the severe pains I was suffering, discouraged me, and I gave up trying to get up a programme, thinking the folks must get along without one as best they could.

Flint, Mich., Sept. 24, 1888.

W. Z. HUTCHINSON.

We are sorry that a regular set programme is not to be carried into effect; but some of the best talks we have at conventions are given off-hand, without thought or preparation. The convention may be relieved of the tedium of listening to some long essay which a set programme might have called for. We feel sure that the convention will be a success anyhow, with such men as Dr. Mason, Dr. Miller, Prof. Cook, and other prominent bee-keepers to enliven the proceedings. We expect to be present from the 3d till the 5th. Dr. Miller is here.

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See advertisement in another column. 3tfdb

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Imported queens, "A" grade, direct from my apiary, \$6.00. From Austria, \$5.00.

I am now able to supply the demand for Ambrosic stock, having succeeded in getting a queen from Mr. Ambrosic, and can send either Benton or Ambrosic stock by return mail.

I have now very fine queens.

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600 DOLLARS

Will buy 250 colonies of bees in L. frame, and 65 honey-cans, cased, 2 in case; one 14-inch foundation-mill with tanks, all as good as new; one saw-table, with saws; honey-extractor and wax-extractor; 125 shipping-crates in flat; 125 supers, part filled with honey; a few thousand sections, with all fixtures belonging to a first-class apiary. 17-19d

ANTHONY OPP, Helena, Phillips Co., Ark.



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can clothe you and furnish you with all the necessary and unnecessary appliances to ride, walk, dance, sleep, eat, fish, hunt, work, go to church, or stay at home, and in various sizes, styles and quantities. Just figure out what is required to do all these things COMFORTABLY, and you can make a fair estimate of the value of the BUYERS' GUIDE, which will be sent upon receipt of 10 cents to pay postage.

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1888.

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Books for Bee-Keepers and Others.

Any of these books on which postage is not given will be forwarded by mail, *postpaid*, on receipt of price.

In buying books, as every thing else, we are liable to disappointment, if we make a purchase without seeing the article. Admitting that the bookseller could read all the books he offers, as he has them for sale, it were hardly to be expected he would be the one to mention all the faults, as well as good things about a book. I very much desire that those who favor me with their patronage shall not be disappointed, and therefore I am going to try to prevent it by mentioning all the faults so far as I can, that the purchaser may know what he is getting. In the following list I especially approve, *; those that are not up to times, †; books that contain but little matter for the price, large type, and much space between the lines, ‡; foreign, §.

BIBLES, HYMN-BOOKS, AND OTHER GOOD BOOKS.	
8 Bible, <i>good print</i> , neatly bound.....	25
10 Bunyan's Pilgrim's Progress**.....	35
6 First Steps for Little Feet. By the author of the Story of the Bible. A better book for young children can not be found in the whole round of literature, and at the same time there can hardly be found a more attractive book. Beautifully bound, and fully illustrated. Price 50c. Two copies will be sold for 75 cents. Postage six cents.	
5 Harmony of the Gospels.....	35
3 John Ploughman's Talks and Pictures, by Rev. C. H. Spurgeon*.....	10
1 Moody and Sankey's Gospel Hymns, words only, No. 1, paper.....	05
1 Same, Nos. I., II., III., and IV., combined, words only, board.....	20
10 Same, words and music, board.....	75
3 New Testament in pretty flexible covers.....	05
5 New Testament, new version, paper cover.....	10
5 Robinson Crusoe, paper cover.....	20
15 Story of the Bible**.....	1 00
A large book of 700 pages, and 274 illustrations. Will be read by almost every child.	
5 The Christian's Secret of a Happy Life**.....	25
10 Same in cloth binding.....	50
1 "The Life of Trust," by Geo. Muller**.....	1 25
1 Ten Nights in a Bar Room, by T. S. Arthur*.....	03

BOOKS ESPECIALLY FOR BEE-KEEPERS.

As many of the bee-books are sent with other goods by freight or express, incurring no postage, we give prices separately. You will notice, that you can judge of the size of the books very well, by the amount required for postage on each.

Postage.] [Price without postage.	
12 A B C of Bee Culture** Paper.....	83
15 A B C of Bee Culture** Cloth.....	1 10
5 A Year Among the Bees, by C. C. Miller*.....	70
14 Bees and Bee-keeping, by Frank Cheshire, England, Vol. I,**.....	2 36
21 Same, Vol. II,**.....	2 79
or, \$5.25 for the two, postpaid.	
1 Bees and Honey, by T. G. Newman.....	1 00
15 Cook's New Manual** Cloth.....	1 35
2 Dzierzon Theory**.....	10
1 Foul Brood; Its management and cure; D. A. Jones**.....	09
1 Honey as Food and Medicine.....	5
10 Langstroth on the Hive and Honey-Bee**.....	1 90
10 Quinby's New Bee-Keeping**.....	1 40
10 Queen-Rearing, by H. Alley*.....	1 00
4 Success in Bee Culture, by James Heddon*.....	46
1 The Production of Comb Honey, by W. Z. Hutchinson**.....	25

The Apiary; or, Bees, Bee-Hives, and Bee Culture, by Geo. Neighbour & Sons, England*
 British Bee-keeper's Guide - Book, by Thos. Wm. Cowan, Esq., England*
 3 | Merrybanks and His Neighbor, by A. I. Root.....

MISCELLANEOUS HAND-BOOKS.

3 | A B C of Potato Culture, Terry*.....
 This is T. B. Terry's first and most masterly work. The book has had an enormous sale, and has been reprinted in foreign languages. When we are thoroughly conversant with friend Terry's system of raising potatoes, we shall be ready to handle almost any farm crop successfully. It has 48 pages and 22 illustrations.

5 An Egg-Farm, Stoddard**.....	45
5 Barn Plans and Out-Buildings*.....	1 50
5 Cranberry Culture, White's.....	1 25
5 Canary Birds; paper, 50c; cloth.....	75
5 Draining for Profit and Health, Warring.....	1 50
5 Eclectic Manual of Phonography; Pitman's System; cloth.....	50
10 Farming For Boys*.....	1 15
This is one of Joseph Harris' happiest productions, and it seems to me that it ought to make farm-life fascinating to any boy who has any sort of taste for gardening.	

6 Fuller's Practical Forestry*.....	1 40
10 Fuller's Grape Culturist**.....	1 40
7 Farm, Gardening, and Seed-Growing, by Francis Brill**.....	90

This is by Francis Brill, the veteran seed-grower, and is the only book on gardening that I am aware of that tells how market-gardeners and seed-growers raise and harvest their own seeds. It has 166 pages.

10 | Gardening For Pleasure, Henderson*.....
 While "Gardening for Profit" is written with a view of making gardening pay, it touches a good deal on the pleasure part; and "Gardening for Pleasure" takes up this matter of beautifying your homes and improving your grounds, without the special point in view of making money out of it. I think most of you will need this if you get "Gardening for Profit." This work has 246 pages and 134 illustrations.

12 | Gardening for Profit,** New Edition.....
 This is a late revision of Peter Henderson's celebrated work. Nothing that has ever before been put in print has done so much toward making market-gardening a science and a fascinating industry. Peter Henderson stands at the head, without question, although we have many other books on these rural employments. If you can get but one book, let it be the above. It has 376 pages and 138 cuts.

8 | Gardening for Young and Old, Harris**.....
 10 | Garden and Farm Topics, Henderson**.....
 This is Joseph Harris' best and happiest effort. Although it goes over the same ground occupied by Peter Henderson, it particularly emphasizes thorough cultivation of the soil in preparing your ground; and this matter of adapting it to young people as well as to old is brought out in a most happy vein. If your children have any sort of fancy for gardening it will pay you to make them a present of this book. It has 187 pages and 46 engravings.

Gray's School and Field Book of Botany.....	1 80
5 Gregory on Cabbages; paper*.....	25
5 Gregory on Squashes; paper*.....	25
5 Gregory on Onions; paper*.....	25

The above three books, by our friend Gregory, are all valuable. The book on squashes especially is good reading for almost anybody, whether they raise squashes or not. It strikes at the very foundation of success in almost any kind of business.

10 Household Conveniences.....	1 40
2 How to Propagate and Grow Fruit, Green*.....	25
5 How to Make Candy*.....	45
10 How to Keep Store*.....	1 00
10 Irrigation for the Farm, Garden, and Orchard, Stewart*.....	1 40

This book, so far as I am informed, is almost the only work on this matter that is attracting so much interest, especially recently. Using water from springs, brooks, or windmills, to take the place of rain, during our great droughts, is the great problem before us at the present day. The book has 274 pages and 142 cuts.

3 | Maple Sugar and the Sugar-Bush,**.....
 By Prof. A. J. Cook. This was written in the spring of 1887, at my request. As the author has, perhaps, one of the finest sugar-camps in the United States, as well as being an enthusiastic lover of all farm industries, he is better fitted, perhaps, to handle the subject than any other man. The book is written in Prof. Cook's happy style, combining wholesome moral lessons with the latest and best method of managing to get the finest sugar and maple syrup, with the least possible expenditure of cash and labor. Everybody who makes sugar or molasses wants the sugar-book. It has 42 pages and 35 cuts.

10 Money in The Garden, Quinn*.....	1 40
1 Poultry for Pleasure and Profit*.....	10
11 Practical Floriculture, Henderson*.....	1 35
10 Peach Culture, Fulton's.....	1 50
10 Profits in Poultry.....	90
2 Purdy's Small-Fruit Instructor*.....	15
2 Silk and the Silkworm.....	10
10 Small-Fruit Culturist, Fuller*.....	1 40
3 Strawberry Culturist, Fuller*.....	15
10 Success in Market-Gardening*.....	90

This is new book by a real, live, enterprising, successful market-gardener who lives in Woburn, a suburb of Boston, Mass. Friend Rawson has been at the forefront to make irrigation a practical success, and now irrigates his grounds by means of a windmill and siphon, and whenever a drought threatens to injure the crops, he can have 208 p. c. s, and is nicely illustrated with 110 engravings.

10 | Talks on Manures*.....
 This book, by Joseph Harris, is the most comprehensive one we have on the subject, and is well considered by an able writer. It contains 100 pages.

2 The Carpenter's Steel Square.....	15
2 Treatise on the Horse and his Uses;.....	10
10 The New Agriculture, or the Woburn Captive.....	1 00

3 | Winter Care of Horses and Cattle.....
 This is friend Terry's second book on horse matters; but it is so intimately connected with the first, that it reads almost like a sequel to it. I think it will pay you to get it. It has 40 pages, and 4 cuts.

8 What to Do, and How to Do It, by A. J. Root*.....	1 50
3 Wood's Compendious System of Agriculture*.....	1 00

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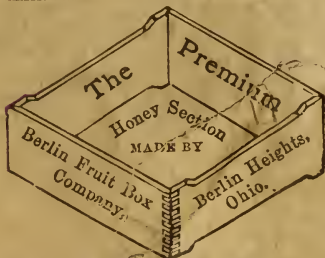
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